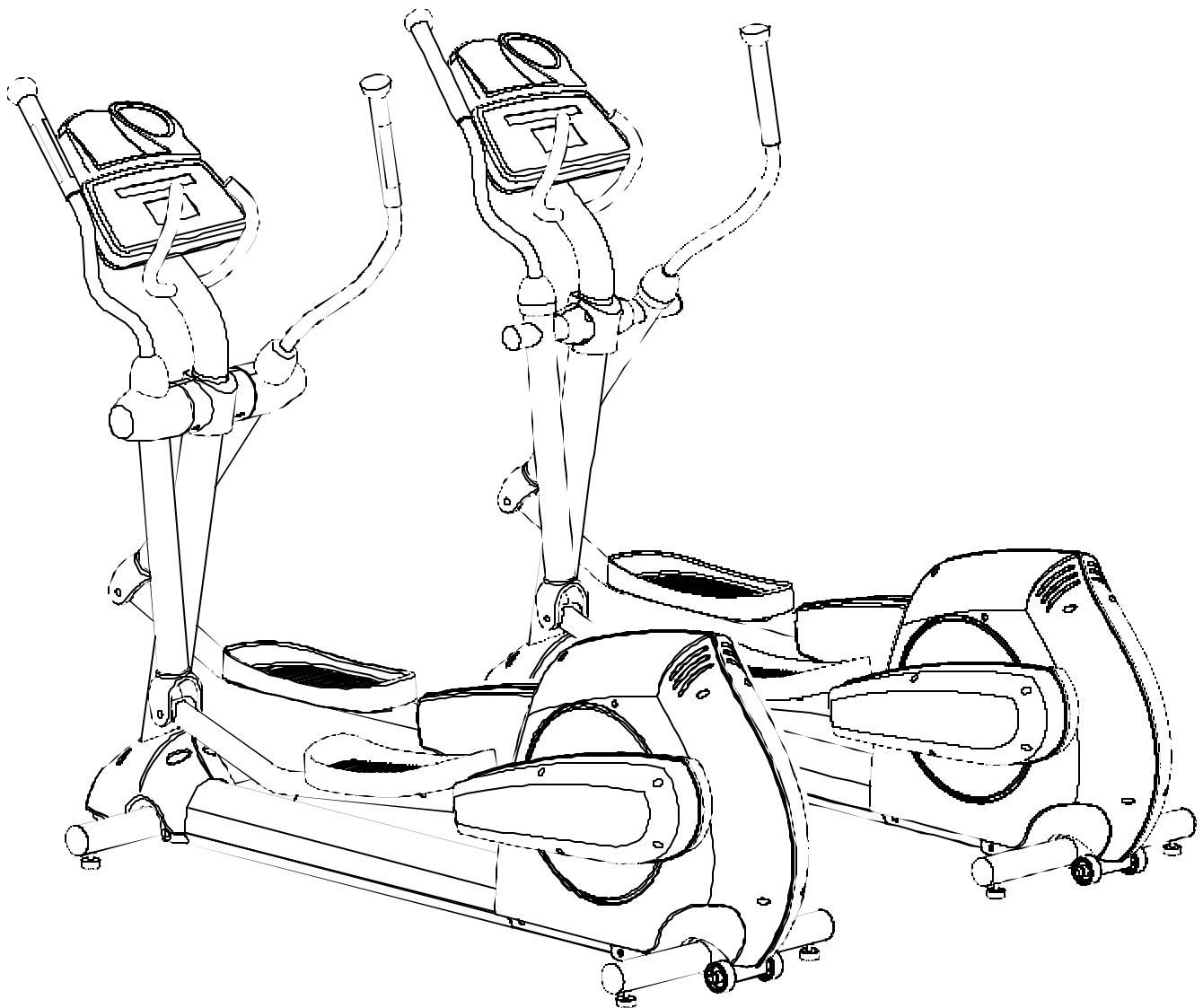




Models 8500, 9100, and 9500HR
Total Body Cross-Trainers with Rear Drive System



Customer Support Services
SERVICE MANUAL

Life Fitness Models 8500, 9100, and 9500HR Cross-Trainers

INTRODUCTION

HOW TO USE THIS SERVICE MANUAL AND CONTACT CUSTOMER SUPPORT SERVICES

This service manual is applicable to Cross-Trainer Models CT8500, CT9100, and CT9500HR. **Note:** Information represents typical configuration and may differ slightly from actual equipment. The Service Manual provides recommendations for safe and efficient approaches to problem situations. This manual is separated into six sections.

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Refer to **TABLE OF CONTENTS** for section topics.

When an operating problem occurs, refer to troubleshooting guides and diagnostic tests in an attempt to isolate the cause. When applicable, guides and tests are listed by symptom followed with suggestions of probable cause(s).

Once you have pinpointed the source of the problem, refer to "How To..." guides for recommended repair procedures. "How To..." sub-sections are organized by replaceable part or assembly name. For convenience, sub-section lists recommended "Tools Required" to complete each specific function.

Refer to the PARTS IDENTIFICATION section to identify proper name and number of part to order for repair of equipment.

A reproducible telefacsimile order claim form is provided in COMMUNICATING BY TELEFACSIMILE for convenient ordering of service parts.

To order, contact Life Fitness Customer Support Services.

Via telefacsimile - 24 hrs. /day, 7 days/week.

Via telephone - Monday through Friday from 8:00 AM to 7:00 PM (C.S.T.).

To speed Life Fitness Customer Support Services response to your needs, please be prepared to provide the following information to the phone technician.

1. Model number
2. Serial number consists of 3 letters and 6 numbers
3. Symptom of problem
4. Part name and number to order (if known)

Before installing a part, review "How To..." and follow the step by step procedures recommended to install the part safely and efficiently. If you have questions or comments, please telephone, FAX or write us. We are:

LIFE FITNESS - CUSTOMER SUPPORT SERVICES
10601 Belmont Avenue; Franklin Park, IL 60131; U.S.A.
Telephone: 847.451.0036 or Toll Free 800.351.3737
FAX: 847.288.3702 or Toll Free 800.216.8893

Life Fitness Models 8500, 9100, and 9500HR Cross-Trainers

THEORY OF OPERATION

The electronic system on the rear-drive crosstrainer is made up of three main functional blocks: 1) Console, 2) HR telemetry, and 3) Alternator, Power Control Board, and Load. In addition, the 9500 model has Lifepulse contact HR. The following is a description of each functional block:

CONSOLE

The system voltage (6-7.5Vdc) enters on connector P2 pin 1 and is used to power the LEDs and provide a supply voltage for the 5V-regulator circuitry used to power the microprocessor section.

The Keypad entry (user's input), Lifepulse (9500HR only), and Telemetry are all processed by the microprocessor. The console outputs a PWM signal to the power control board to control the duty cycle of the load.

ALTERNATOR, POWER CONTROL BOARD, AND LOAD

Using the PWM signal from the console, the power control board switches the current on and off at the load via Q1. The control board also regulates the alternator voltage using the U1 comparitors. Q3 and Q9 are used to sense the reed switch actuation (autostart feature).

POLAR

HR telemetry is implemented via a Polar receiver located in the rocker arm shroud at the front of the unit. The Polar receiver connects to the console at connector P7.

LIFEPULSE (9500 ONLY)

The handlebar electrodes connect to the console board at connector P9. Pins 1 and 4 are signal, pins 2 and 3 are circuit reference.

Life Fitness Models 8500, 9100, and 9500HR Cross-Trainers

TERMINOLOGY

The following words and acronyms are commonly referred to throughout this manual. Take time to familiarize yourself with them.

Connectors	Electrical plugs used to connect wiring into electrical component.
Display Console Board	Electronic board for making settings and monitoring physical output.
DSP	Digital system processing.
EEPROM	Electrically erasable programmable read only memory.
EEROM	Electrically erasable read only memory.
LDC	Load duty cycle.
LED	Light emitting diode used to show a state of operation.
LifePulse	Heart rate sensors on hand grips.
PCB	Power control board regulates voltage to alternator, console, and battery.
Polar Receiver	A device directly in front of the operator that monitors heart rate.
Rear drive	The area where all the drive components reside.
RPM	Revolutions per minute describes the amount of times something turns within a minute of time.

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SECTION I

TROUBLESHOOTING GUIDES

Malfunction	Probable Cause	Corrective Action
Grinding, rubbing, knocking noises when pedal levers rotate under load.	Pulleys misaligned.	Loosen the pillow block bearings, realign the pulleys, and retighten the pillow block bearings.
	Dirt build up in pedal tracks.	Clean and remove dirt build up.
	Rear roller wheels frozen.	Clean and lubricate with non detergent oil.
	Link cover contacting rear cover.	Reposition rear cover(s) or replace.
		Check that the inner link cover mounting screws are properly installed.
	Excessive disk wobble.	Make sure no weld interference occurs between the crankarm and the disk cover.
		Ensure that the crankshaft is flush with the crankarm and check for proper alignment. See How To.
	Faulty intermediate shaft assembly.	Replace intermediate shaft assy.
	Faulty pillow block.	Replace pillow blocks on crankshaft.
	Alternator.	Relieve tension on alternator, spin flywheel for smoothness. If thumping occurs, faulty alternator. Replace alternator.
	Bearings at pivot points are out of position or dirty.	Clean all sleeves in the linkage pivot areas and lubricate with non detergent oil.
	Setscrews or crankarm bolt in crankarm assembly are loose.	Loosen setscrew and clamping screw in crankarm assembly. Apply blue Loctite® (242) on screw threads. Tighten setscrew first to set keyway, then tighten clamping screw. Crankarm bolt requires no Loctite.
	Small extension arm bolt loose.	Replace small extension arm kit.
	Faulty link bearings.	Replace link assembly.

	Link mounting loose.	Clean, lubricate, and retighten.
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Malfunction	Probable Cause	Corrective Action
Grinding, rubbing, knocking noises when pedal levers rotate under load.	Excessive end play in rocker arms.	Adjust collars as necessary to take out the end play. See How To Replace Rocker Arms.
	Pedal lever vibrates or squeaks during operation.	Align pedal lever. See How To Replace Pedal Lever.
	Pedal tape not adhering properly.	See How To Replace Pedal Lever
Drive Belt slipping.	Loose or worn belt.	Check belt tension using a J10 belt gauge. The belt deflection should be 1/4" (7mm) at 170 lb for a new belt and 160 lb for an existing belt.
Upper Arms feel loose.	Bolts that connect the upper and lower arms are loose.	Adjust and tighten to a torque of 30-35 ft lb.
Front to back play in pedal lever.	Worn bearings.	Check for front to back movement in bearings that connect pedal lever to the rocker arm. Replace pedal lever assembly.
	Poly V-Pulley on intermediate shaft is loose.	Replace intermediate shaft assembly.
	Crankarm loose.	Loosen setscrews and clamping screw in Crankarm Assembly. Apply blue Loctite® 242 on screws. Tighten setscrews first and then tighten the clamping screw.
	Worn link bearings.	Replace link.
	Loose link mounting.	Clean, lube, and reassemble.
No Load.	Faulty cables, power console board, or alternator.	Enter diagnostic state 3 and execute the field duty cycle and increase the load. If load does not increase, replace alternator.
No LEDs on display.	Faulty display console.	Using a voltmeter, verify 8Vdc at the 10 position Molex connector pin 1 on the display console PCB. If voltage is present, replace display console. If not, replace power control board.

	Faulty power control board.	Using a voltmeter, verify 8Vdc at 11 position connector pin 4 on the power control board. If present, replace console cable. If not, replace board.
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Malfunction	Probable Cause	Corrective Action
Alternator belt slipping.	Belt is loose.	Retension from 65-70 lb.
No heart rate or erratic heart rate.	Pinched cable in Monocolumn cover.	Remove monocolumn covers and inspect cables. Replace damaged cable.
	Defective chest strap or improperly positioned.	Replace chest strap or reposition it. Reset transmitter. Refer to Diagnostics state 3 to execute the heart rate test.
	No heart rate reading.	Execute Diagnostic Mode to verify performance of heart rate function.
	Faulty cable connection.	Verify heart-rate cable is properly connected. Using an ohmmeter, verify continuity at the main console cable.
	Malfunctioning user arm/Lifepulse (CT9500HR) Grip Assembly (include worn or damaged heart rate lead).	Replace user arm/Lifepulse (CT9500HR) Assembly.
	Life Pulse user arm defective.	Verify user arm is functioning. Wipe sensors dry. Using an ohmmeter, verify continuity between Lifepulse sensor and cable connection. Replace if defective.
	Loose or malfunctioning heart rate lead connection at Display Console.	Secure connection. Replace malfunctioning user arm/Lifepulse (CT9500HR) Grip Assembly.
	Heart-rate (DSP) Board (CT9500HR) is faulty or not communicating.	Verify that the heart-rate (DSP) board (CT9500HR) is communicating. If defective, replace.
	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
	Cross talk from telemetry and another transmitter or possible interference from other electronic devices.	Position Cross-Trainer at least 3 ft (1 m) from unit with telemetry or from other electronic devices.
	Bad connection.	Check for corrosion on connectors. Disconnect and reconnect telemetry receiver.

Malfunction	Probable Cause	Corrective Action
No LEDs or random LEDs lit.	Cable connection faulty.	Remove display console and verify cable is properly plugged into console.
	Main wire harness damaged.	Check for a damaged wire harness. Replace wire harness.
No RPM. Unit shuts off one minute into program.	Bad cable connection.	Verify cables connections at console to power control PCB, and power control PCB to alternator. Disconnect and reconnect cables. Using a voltmeter, verify cable continuity on console to power control PCB and power control PCB to alternator.
Auto start failure	No RPM	Operator must be peddling unit for the auto start feature to activate.
	Battery	Battery voltage should be 5.8 – 6.3 Vdc. If not, replace the battery.
	Bad cable connection.	Verify cables connections at console, board, and reed switch are correct and connected properly.
	Magnet	Verify that magnet is on crank pulley. If magnet is not present, reinstall magnet.
	Faulty reed switch or board.	Perform a continuity test. Inspect reed switch for damage. If necessary, replace the board.
	Dead battery after C-Safe card is installed.	Replace battery if under 5 VDC and reset jumpers in C-Safe card. See How To Set Jumpers.

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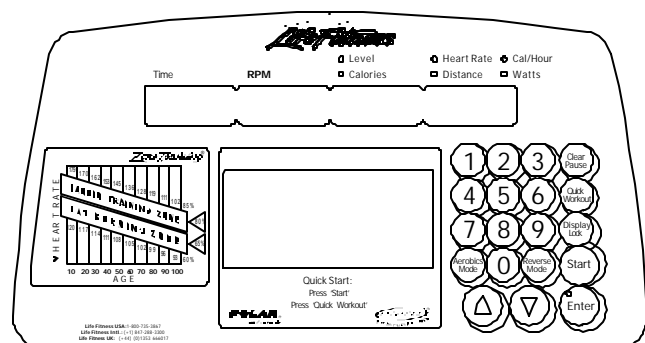
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SECTION II

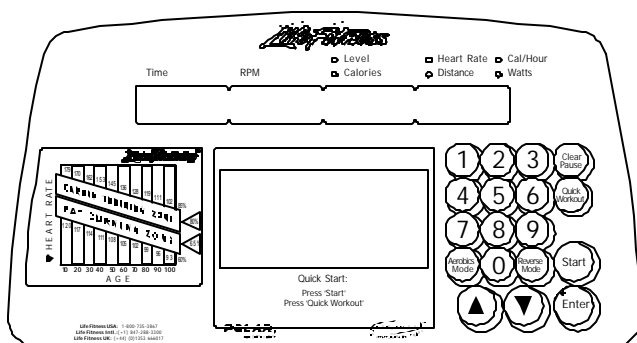
DIAGNOSTIC MODES

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers CT8500, CT9100, and CT9500HR Display Consoles

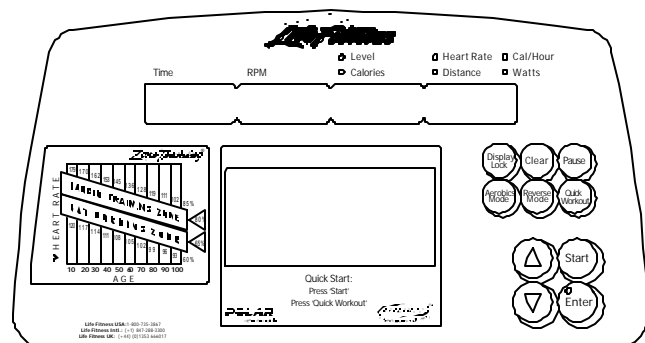
The following three(3) Display Consoles are representative for each model crosstrainer. The following Diagnostic State pages depict a CT9100 Display Console. Regardless of Display Console, the Message Center always provides current Diagnostic Data.



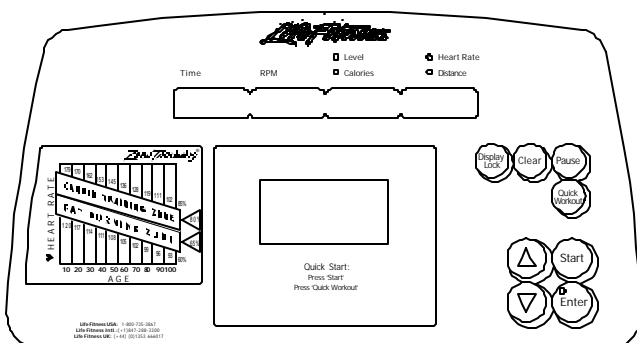
CT9500HR (Display Lock Equipped)



CT9500HR



CT9100



CT8500

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

ENTERING DIAGNOSTIC STATES 1-17

To enter the diagnostic mode, proceed as follows:

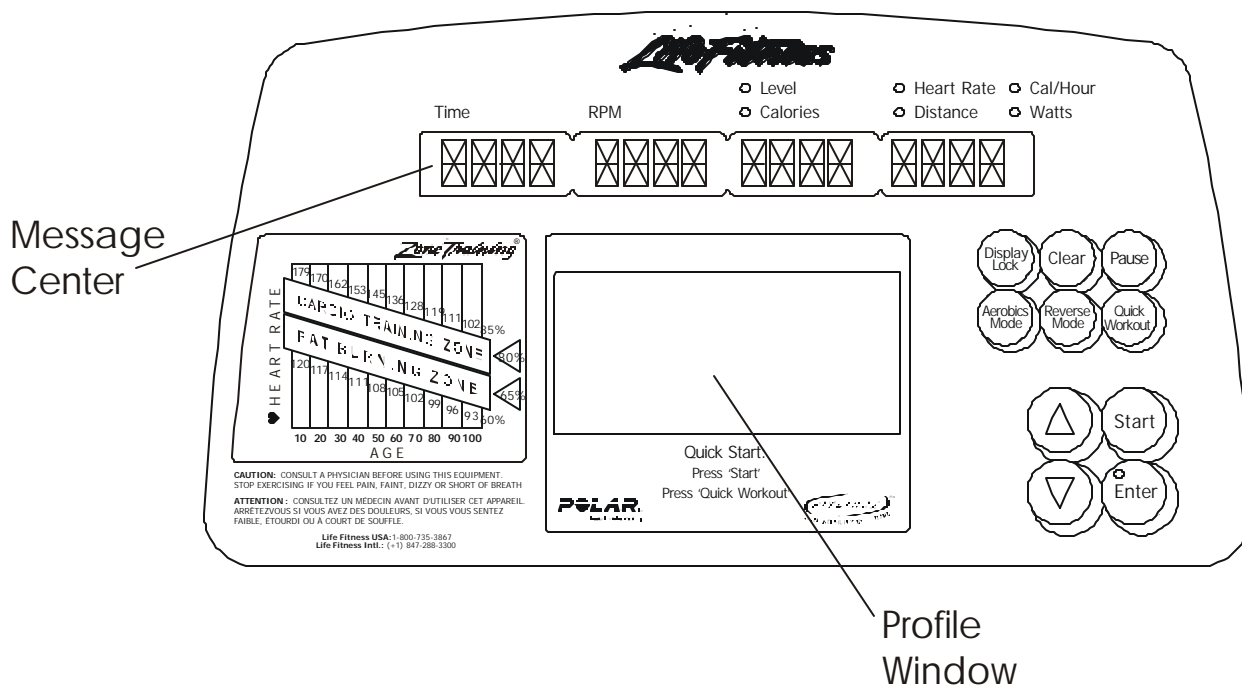
1. Press down and hold the DOWN ARROW key. While doing this, press the CLEAR (CT9100) or CLEAR/PAUSE (CT9500) key twice within 2.5 seconds. The console will go blank momentarily, but do not release the DOWN ARROW key. As soon as the MESSAGE CENTER displays the word "DIAGNOSTICS," then release the DOWN ARROW key.
2. Press the ENTER key to scroll through diagnostic states 1-17.
3. Press the UP and DOWN ARROW keys to activate a selection within a diagnostic state.
4. Press the CLEAR key to scroll back to a previous diagnostic state
5. Press the CLEAR key as required to exit out of the diagnostic program.
6. For diagnostic states that have a subdirectory, press the DISPLAY LOCK key to enter.

NOTE: RPM diagnostic mode requires pedaling.

NOTE: Factory defaults are displayed when the LED is illuminated on the ENTER key.

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

DIAGNOSTIC STATE 1 - LEDs and KEYPAD TEST



Initially all LEDs are lit. When pressing the keys listed below, the appropriate character should display across the MESSAGE CENTER.

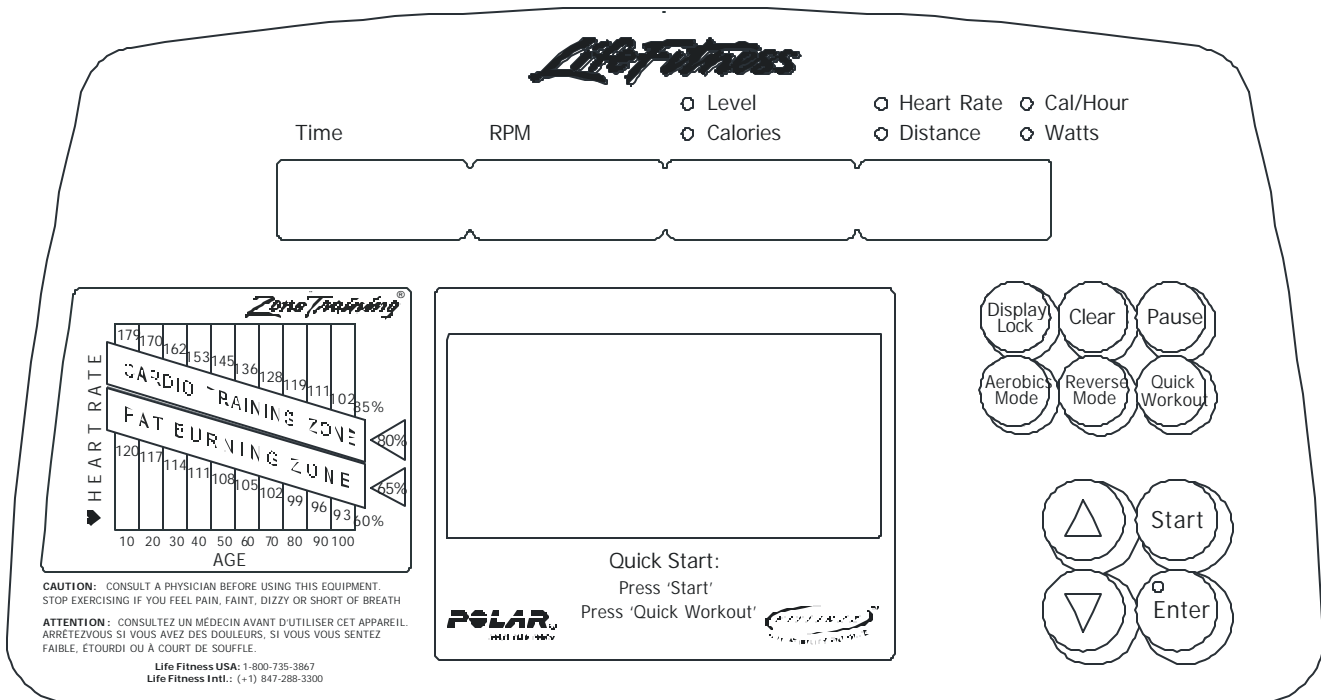
CROSS-TRAINERS 8500 AND 9100		CROSS-TRAINER 9500	
KEY MODE DEPRESSED	CHARACTER DISPLAYED	KEY MODE DEPRESSED	CHARACTER DISPLAYED
Display Lock	L	Clear Pause	-
Clear	-	Quick Workout	Q
Pause	P	Aerobics Mode	A
Aerobics Mode	A	Reverse Mode	R
Reverse Mode	R	Up Arrow	U
Quick Workout	Q	Down Arrow	D
Up Arrow	U	Numeric Keys 0-9	Numeric Value
Down Arrow	D	Start	-
Start	-	Enter	-
Enter	-		

Press the CLEAR key to exit diagnostic mode.

Press the ENTER key to advance to Diagnostic State 2.

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

DIAGNOSTIC STATE 2 - INDIVIDUAL LED TEST



Section II

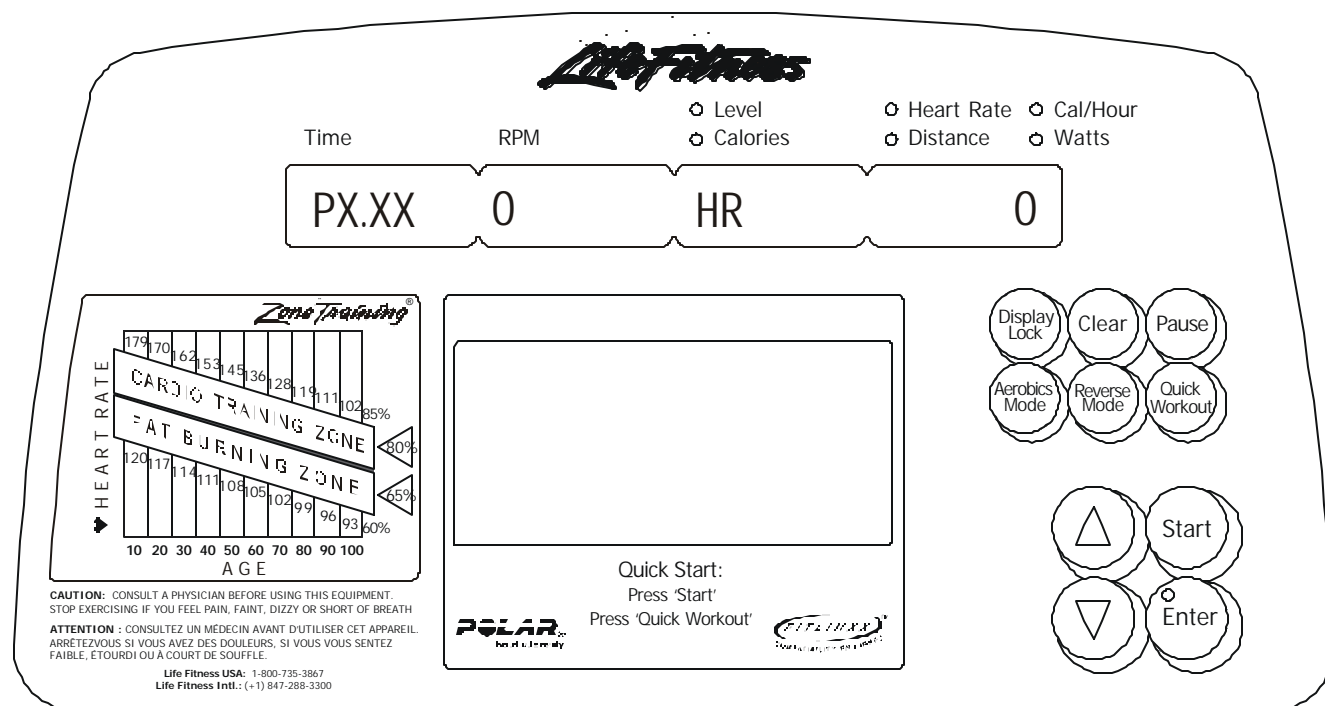
In this test, the system scrolls through each LED automatically to test its functionality.

Press the CLEAR key to return to Diagnostics State 1.

Press the ENTER key to advance to Diagnostics State 3.

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DIAGNOSTIC STATE 3 - Code Version and RPM, Heart Rate, and LDC Tests



The items displayed for selection are Code Version, RPM, Heart Rate, and Load Duty Cycle (LDC).

Code Version will be displayed under the TIME segment and will be a four(4) digit number. Press the DISPLAY LOCK key or the "8" key (CT9500) to access software part number xxxx-xxxxx-xxxx. To go back to the original diagnostic screen press the DISPLAY LOCK key or the "8" key (CT9500).

To verify the RPM signal, pedal and observe RPM value.

To verify that the heart rate system is functioning properly, use a polar simulator or a chest strap. If the unit functions correctly the Heart Rate LED will illuminate and a heart rate value will be displayed in the MESSAGE CENTER under the LEVEL and CALORIES segment. Otherwise if heart rate is not detected then the "HR" characters will be displayed and the HEART RATE LED will not be lit.

While pedaling, press the ARROW keys to verify the alternator LOAD DUTY CYCLE. Using the UP ARROW, increase load resistance from 0 to 250. Zero (0) equals a no Load Duty Cycle (LDC) state. 250 equals 100% of LDC. The Load Duty Cycle value will be located under the HEART RATE and DISTANCE segment.

NOTE: Use the PAUSE and QUICK WORKOUT keys to increment and decrement the LDC value by 10% (CT9100/8500 feature). Use 4 and 6 KEYS to increment and decrement LDC value by 10% (CT9500 feature).

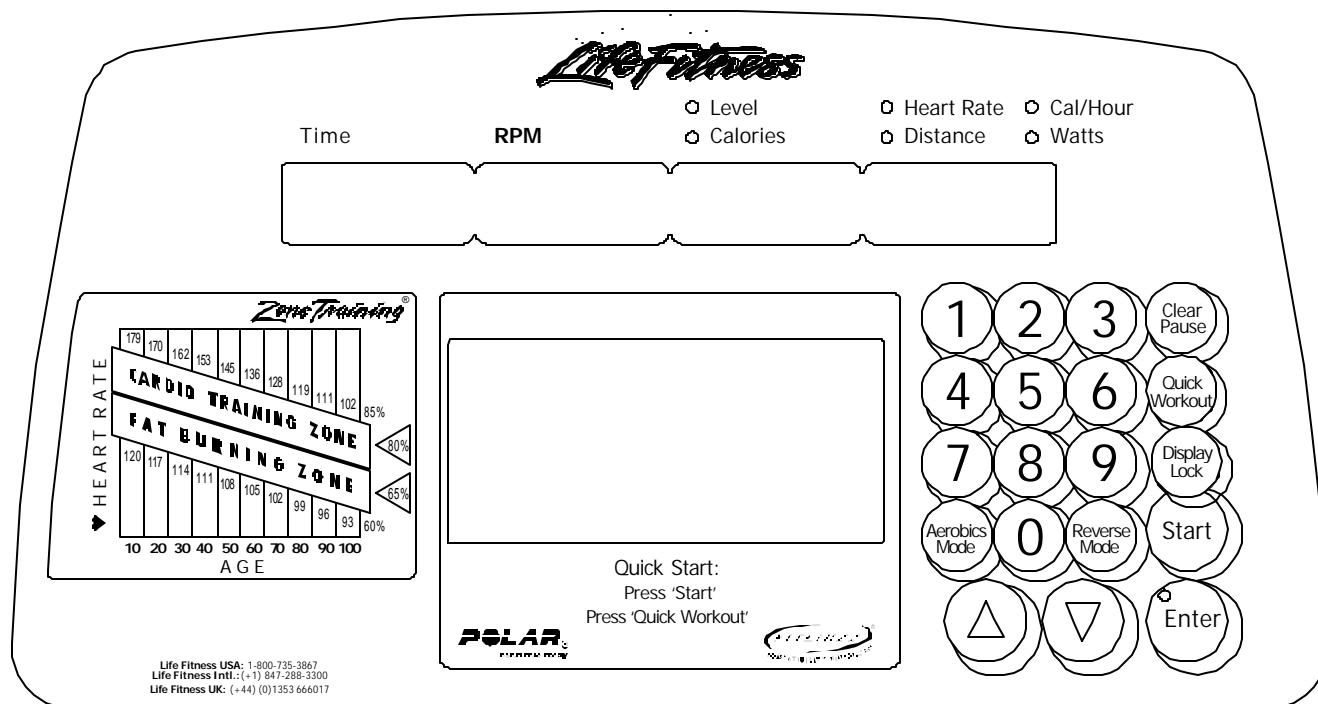
Press the CLEAR key to return to Diagnostics State 2.

Press the ENTER key to advance to Diagnostics State 4.

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DIAGNOSTIC STATE 3 - Code Version and RPM, Networking, and LDC Tests

(DISPLAY LOCK EQUIPPED MODEL ONLY)



Section II

The items displayed for selection are Code Version, RPM, Networking, and Load Duty Cycle (LDC).

Code Version will be displayed under the TIME segment and will be a four(4) digit number. Press the DISPLAY LOCK key or the "8" key (CT9500) to access software part number xxxx-xxxxx-xxxx. To go back to the original diagnostic screen press the DISPLAY LOCK key or the "8" key (CT9500).

To verify the RPM signal, pedal and observe RPM value.

While pedaling, press the ARROW keys to verify the alternator LOAD DUTY CYCLE. Using the UP ARROW, increase load resistance from 0 to 250. Zero (0) equals a no Load Duty Cycle (LDC) state. 250 equals 100% of LDC. The Load Duty Cycle value will be located under the HEART RATE and DISTANCE segment.

The status of the LIFELINK board and LIFECENTER connection will be displayed in the CALORIES window. The following message will be displayed:

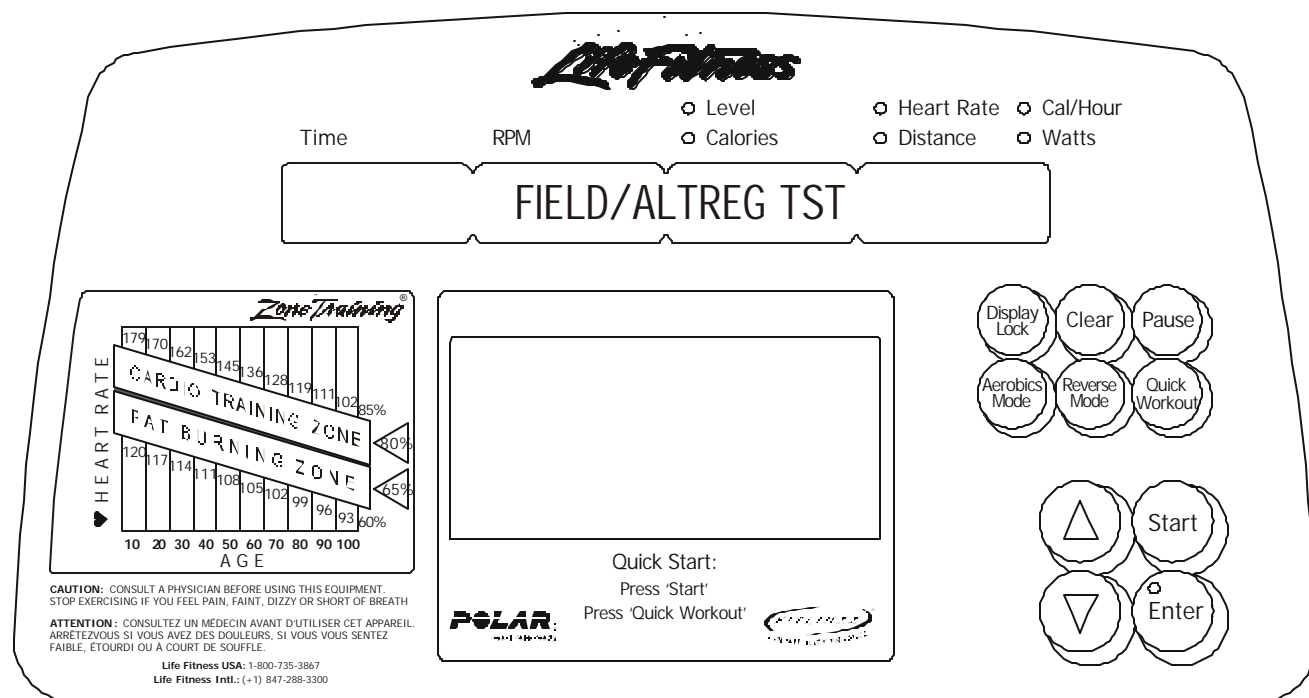
NONE = No LIFELINK board detected
 NULL = Board detected but not communicating
 ON = Online status with Life Center
 OFF = Offline status with Life Center

NOTE: Use the PAUSE and QUICK WORKOUT keys to increment and decrement the LDC value by 10% (CT9100/8500 feature).

Press the CLEAR key to return to Diagnostics State 2.

Press the ENTER key to advance to Diagnostics State 4.

DIAGNOSTIC STATE 4 - FIELD/ALTERNATOR-REGULATOR TEST



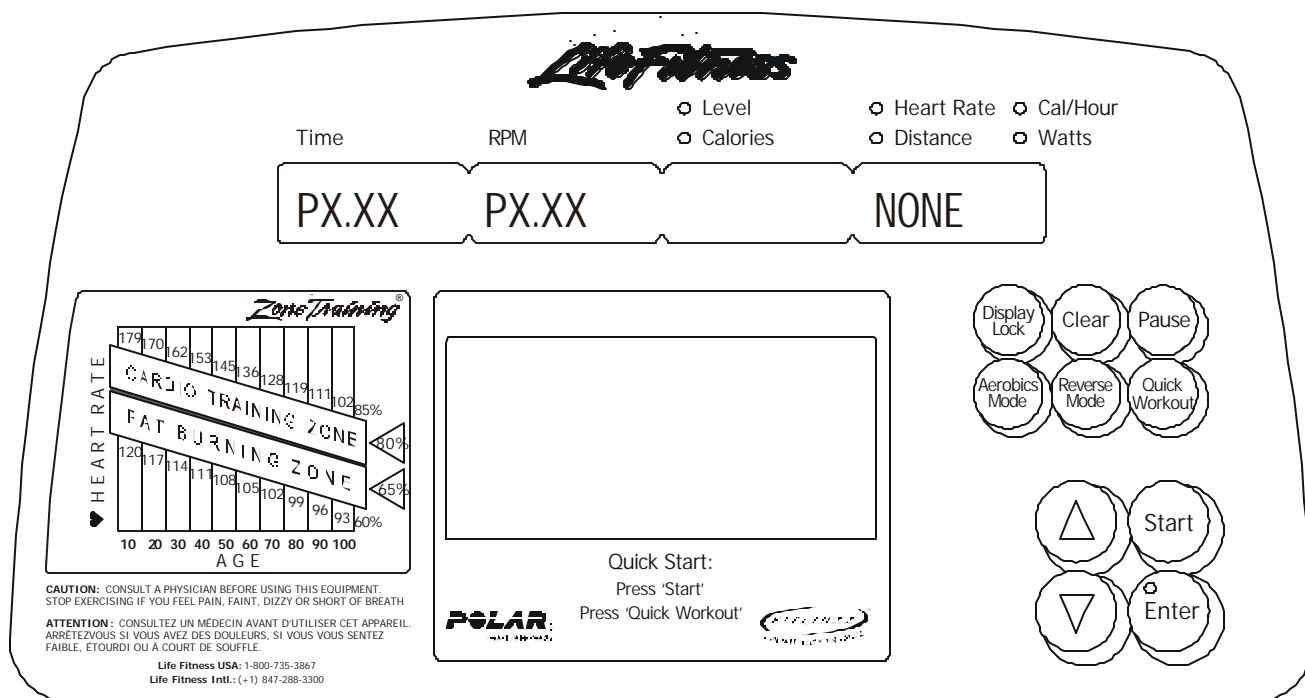
Prior to enter the test modes, set the field load duty in diagnostics state 3 to 50. Press the Display Lock key, or the number 2 key for CT9500 only, once to access Field Test. Use the UP/DOWN ARROW toggle the field voltage ON and OFF. This will verify the operation of the alternator and cable connections. The resistance should increase as the field test is turned on.

Press the Display Lock key, or the number 2 key for CT9500 only, again to access the Alternator/Regulator Test. Use the UP/DOWN ARROW key to toggle voltage ON/OFF. This will verify that the power control board is regulating the voltage properly and the load resistance should slightly decrease as the alternator/regulator is turned on.

Press the CLEAR key to return to Diagnostics State 3.

Press the ENTER key to advance to Diagnostics State 5.

DIAGNOSTIC STATE 5 - PROGRAM VERSION AND NETWORKING TEST



The PROGRAM VERSION NUMBER for 68HC05 micro controller code version will be displayed in the elapsed time window (e.g. P_. _0).

The PROGRAM VERSION NUMBER for HEART RATE DSP Board will be displayed in the speed window (eg. P_. _0).

The status of the LIFELINK board and LIFECENTER connection will be displayed in the CALORIES window. The following message will be displayed:

NONE = No LIFELINK board detected
 NULL = Board detected but not communicating
 ON = Online status with Life Center
 OFF = Offline status with Life Center

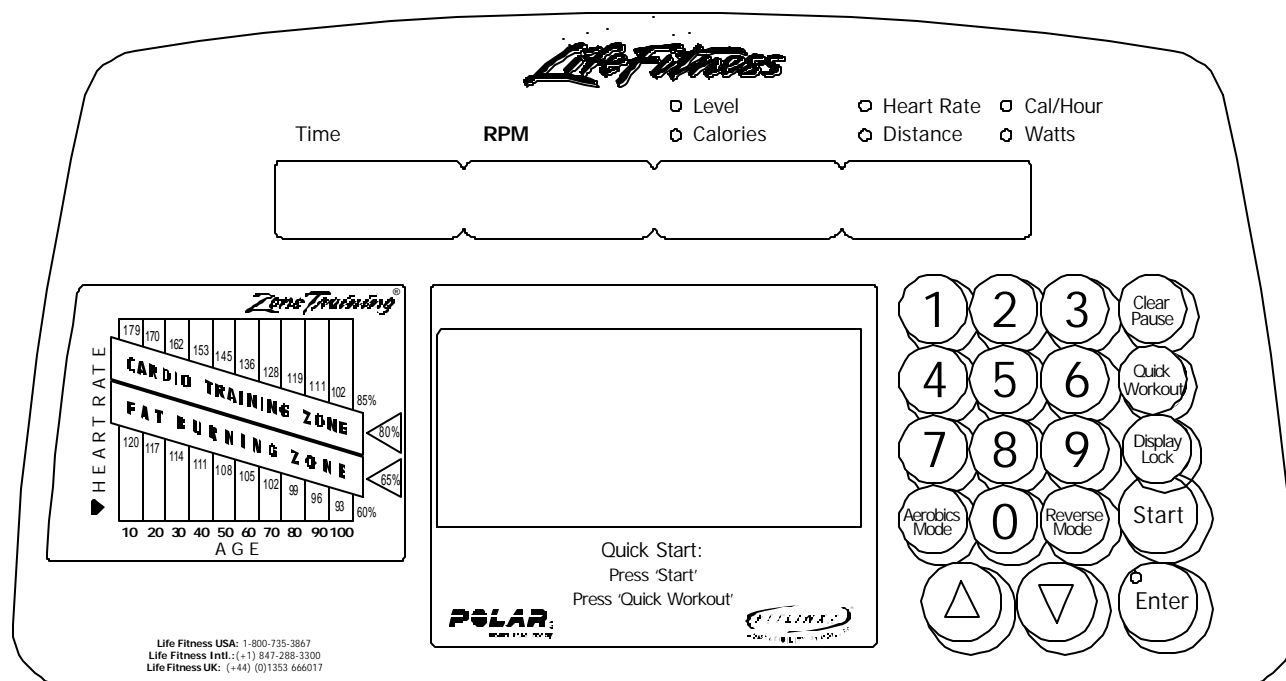
Press the CLEAR key to return to Diagnostics State 4.

Press the ENTER key to advance to Diagnostics State 6.

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DIAGNOSTIC STATE 5 – LIFE PULSE TEST

(DISPLAY LOCK EQUIPPED MODEL ONLY)



Upon initial entry to this test, a message concerning the configuration of the lifepulse system being On or Off. This test will allow the user to test the lifepulse heart rate system.

Following this message, the lifepulse system can be manually tested. A heart will be in the profile window. The system will show when the user has placed their hands on the lifepulse sensors. When the left sensor detects hands on condition, a 'L' will be placed in the profile window with the heart. When the right sensor detects hands on condition, a 'R' will be placed in the profile window with the heart.

A timer will start counting from the time when a both left and right hands on condition occurs to when the lifepulse system can reliably give the user their heart rate. This timer will stop when the heart rate is given.

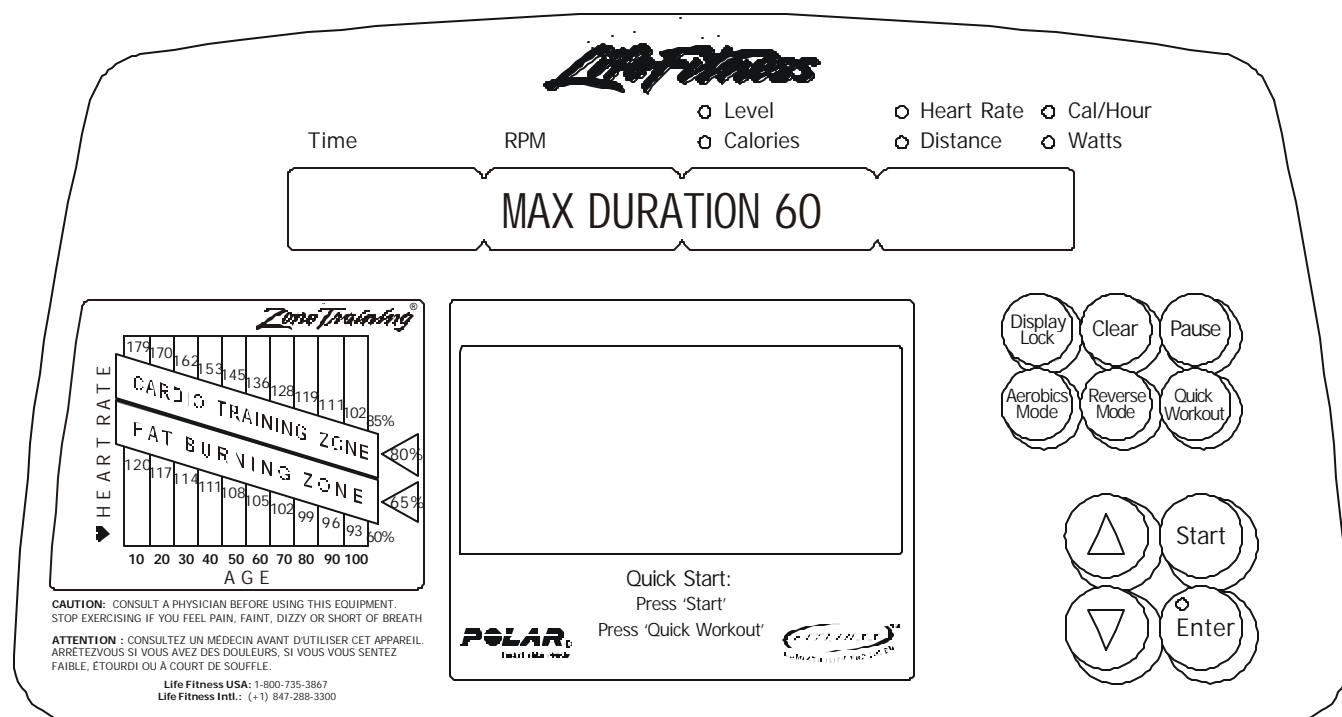
The gain value of the heart rate signal is shown. The confidence level of the heart rate value is displayed. The value ranges from 0 to 9. A value of 9 is considered to be high confidence. A value of 0 is considered to be low confidence.

Press the CLEAR key to return to Diagnostics State 4.

Press the ENTER key to advance to Diagnostics State 6.

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

DIAGNOSTIC STATE 6 - MAXIMUM WORKOUT DURATION



Section II

Maximum program duration can be adjusted from a range between 60-99 minutes. Press the DOWN ARROW to decrease values in decrements of 1 minute. Press the UP ARROW key to increase values in increments of 1 minute.

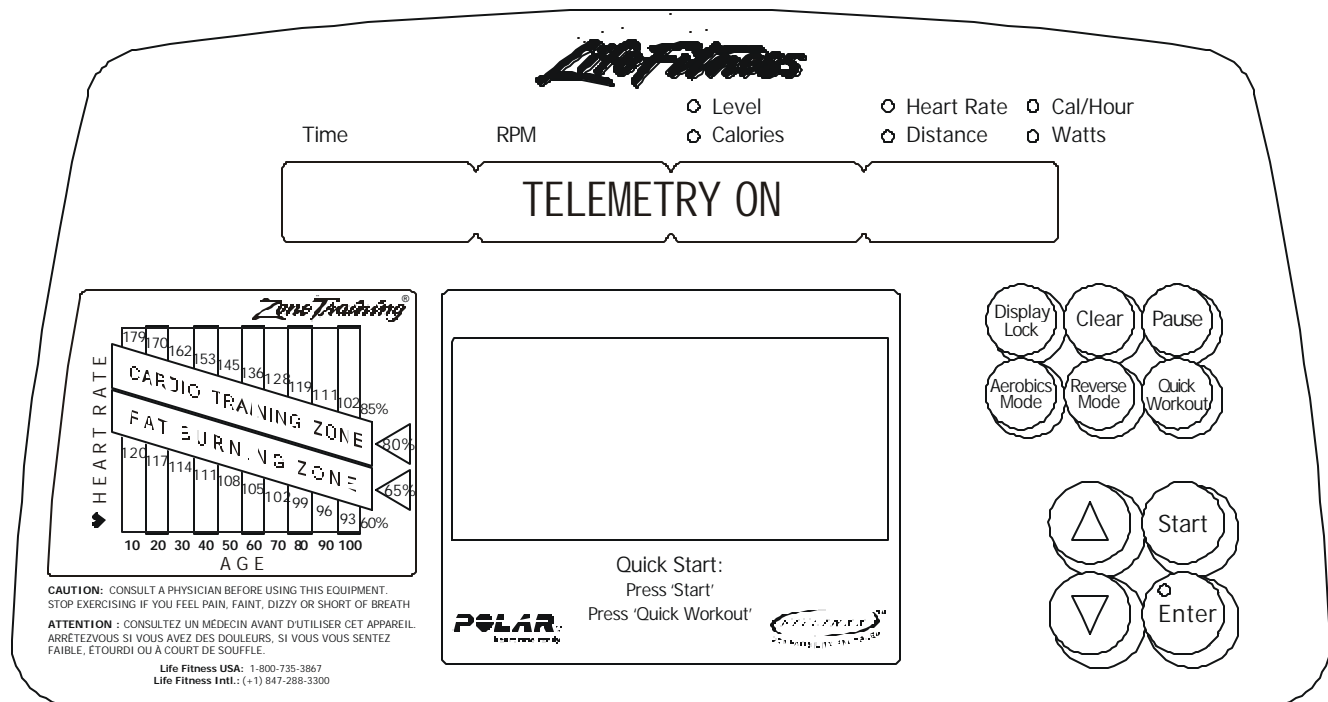
The LED on the ENTER key will illuminate when the value is set to the default of 60 minutes. This value is stored in EEPROM and is stored when the cross-trainer is not in use.

Press the CLEAR key to return to Diagnostics State 5.

Press the ENTER key to advance to Diagnostics State 7.

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

DIAGNOSTIC STATE 7 - TELEMETRY ON/OFF



The default is TELEMETRY ON (CT91/95) TELEMETRY OFF (CT85). Press the DOWN ARROW to turn OFF telemetry and the UP ARROW to turn it back ON. A heart shape illuminates in the program profile window.

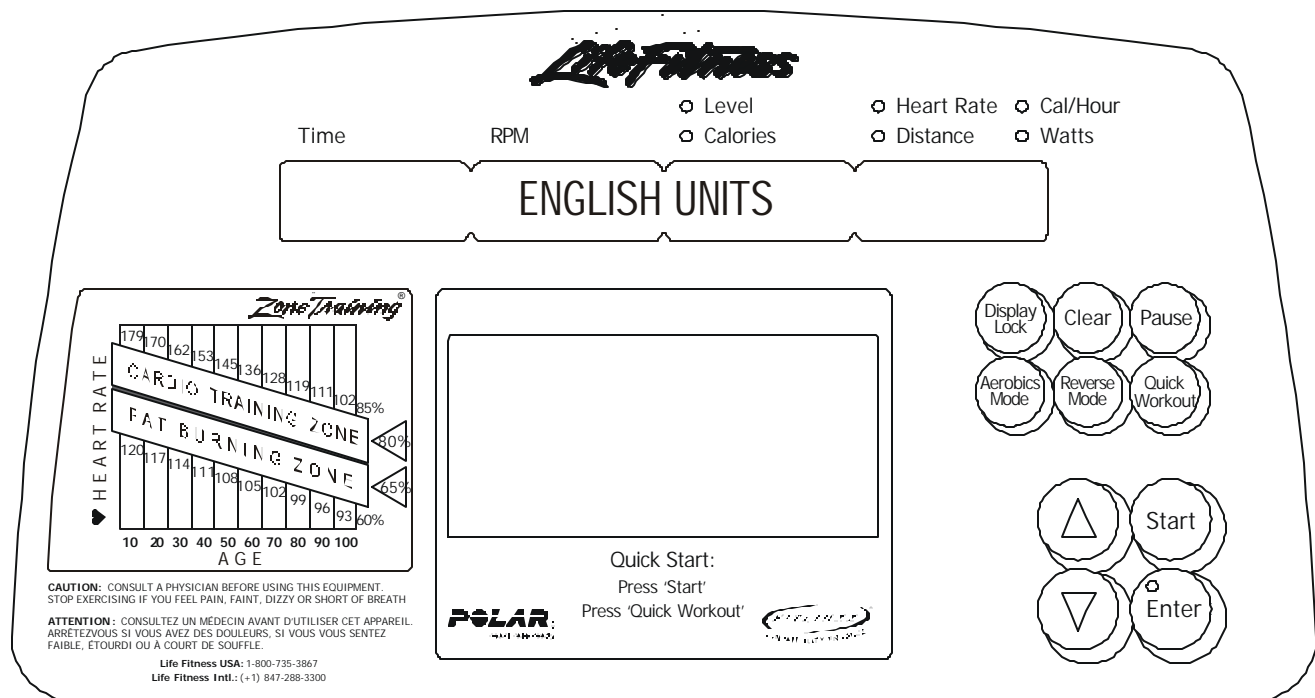
The ENTER key LED illuminates to indicate when TELEMETRY ON. This value is stored in EEROM while the cross-trainer is not in use.

Press the CLEAR key to return to Diagnostic State 6.

Press the ENTER key to advance to Diagnostic State 8.

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

DIAGNOSTIC STATE 8 - ENGLISH OR METRIC UNITS



Section II

ENGLISH or METRIC units can be selected. Press the DOWN ARROW to select METRIC units. Press the UP ARROW to select ENGLISH.

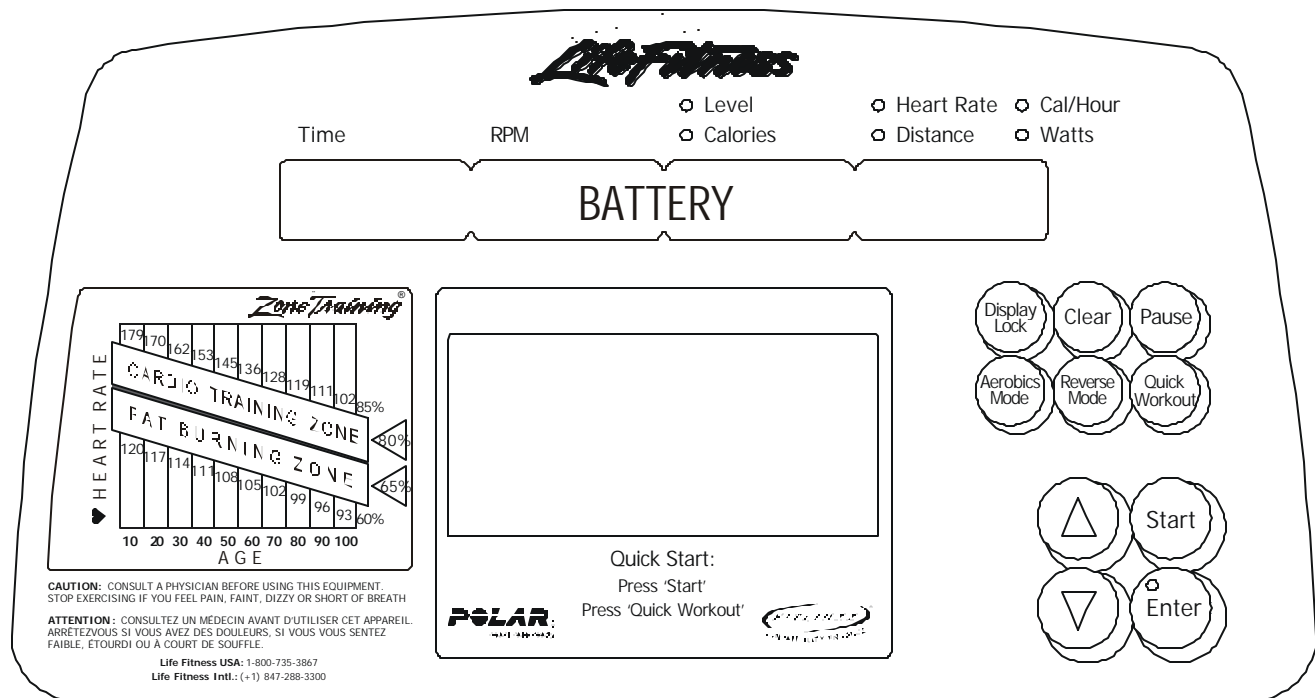
The ENTER key LED illuminates when defaulted to ENGLISH UNITS. This value is stored in EEROM and is kept when the cross-trainer is not in use.

Press the CLEAR key to return to Diagnostic State 7

Press the ENTER key to advance to Diagnostic State 9

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

DIAGNOSTIC STATE 9 - POWER SUPPLY TYPE



There are two types of power supply sources (BATTERY and EXTERNAL).

Make sure that the displayed value is BATTERY. If need be, change the value to BATTERY by pressing the UP ARROW key.

NOTE: If external power is turned ON, the 6 volt rechargeable battery will be drained.

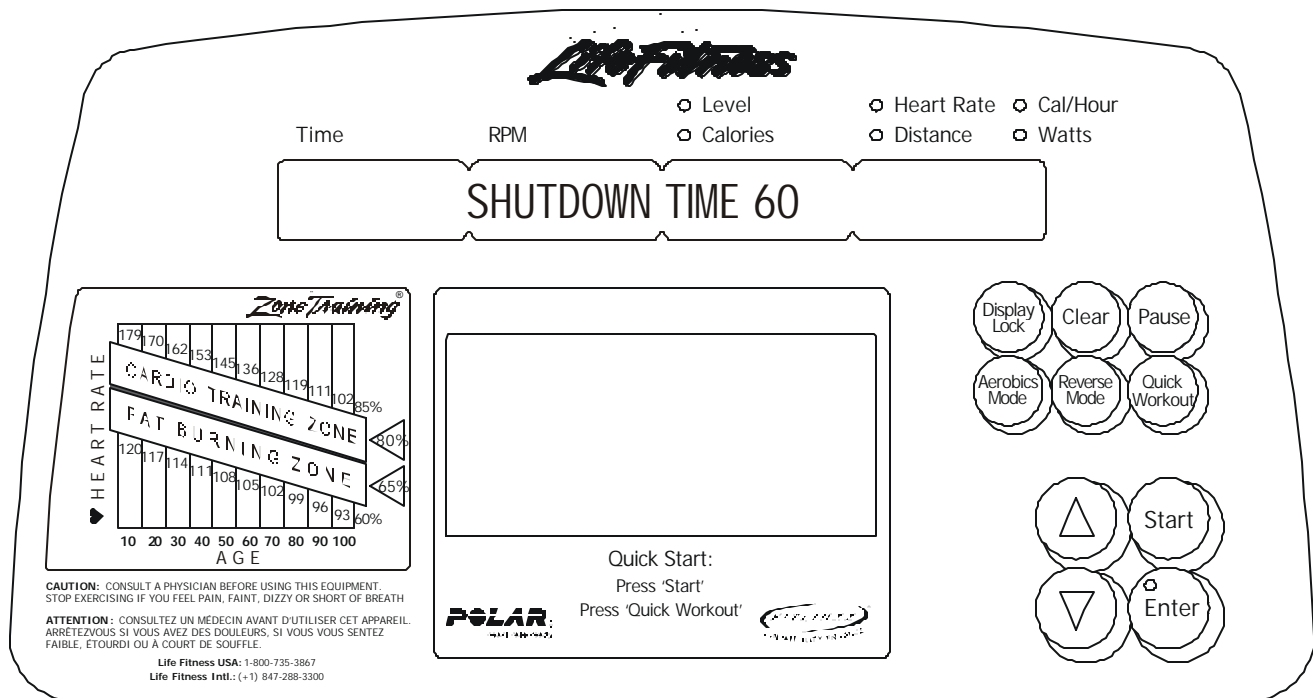
Press the CLEAR key to return to Diagnostic State 8.

Press the 'ENTER' key to advance to Diagnostic State 10.

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

DIAGNOSTIC STATE 10 - SHUTDOWN TIME

Section II



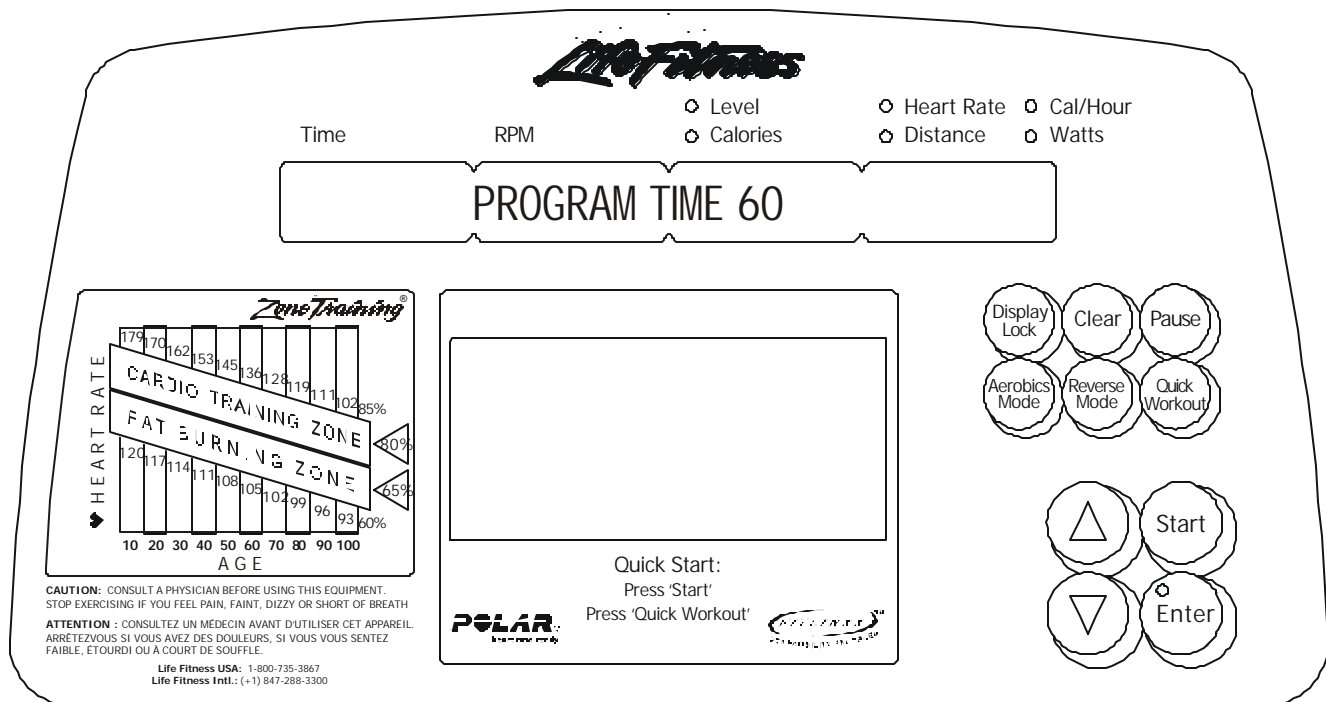
If BATTERY is selected, then SHUTDOWN TIME must be set. The SHUTDOWN TIME (BATTERY only) is set in **seconds** from 1 to 60. The time specified will shut off the Cross-Trainer when no RPMs are detected.

Pressing the 'CLEAR/PAUSE' key will return to Diagnostics State 9.

Pressing the 'ENTER' key will advance to Diagnostics State 11.

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

DIAGNOSTIC STATE 11 - PROGRAM TIME



The PROGRAM TIME, is the maximum time allowed for inputting weight, age, etc. If no entry to program is made after the set program time from 60-99 **seconds**, the unit automatically shuts off.

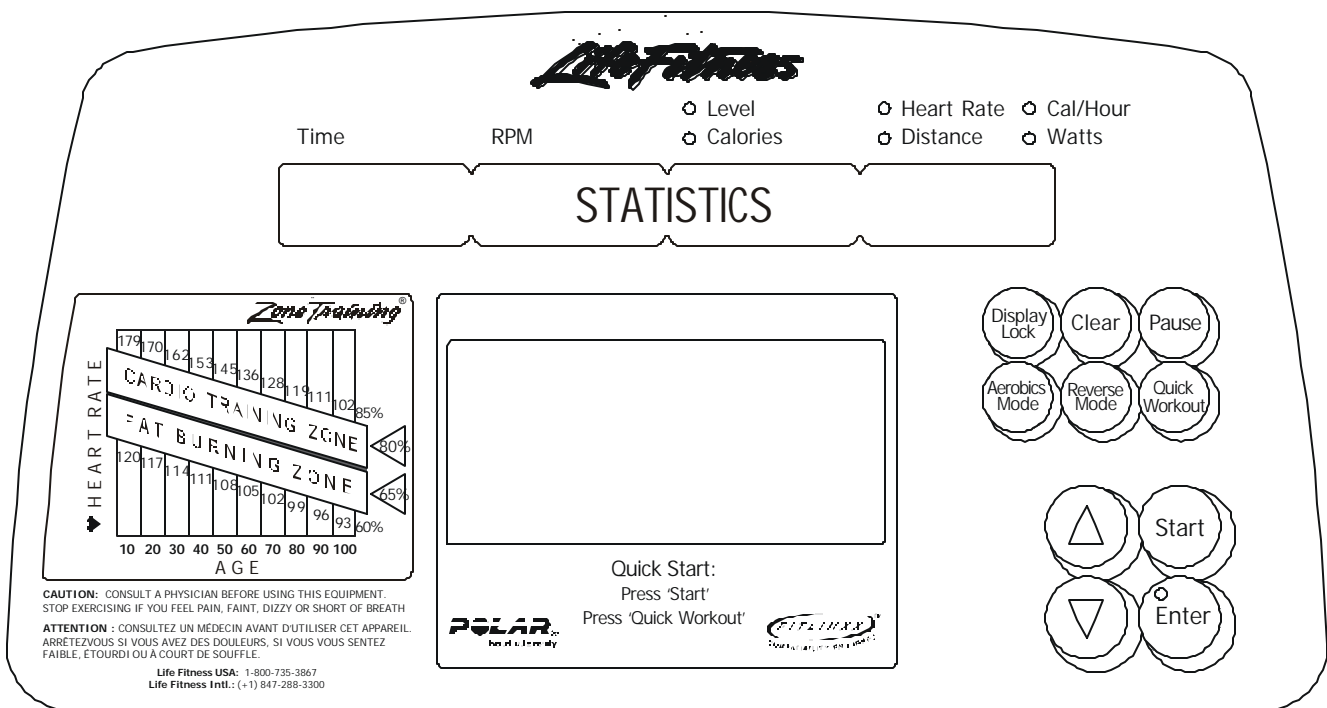
NOTE: If no keys are pressed, the unit will shut down after 15 seconds, not 60-99.

Pressing the 'CLEAR/PAUSE' key will return to Diagnostics State 10.

Pressing the 'ENTER' key will advance to Diagnostics State 12.

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

DIAGNOSTIC STATE 12 – STATISTICS



Section II

Press the UP ARROW to scroll forward through the programs for number of times each program has been selected.

Press the DOWN ARROW to scroll backwards through the programs to display total hours.

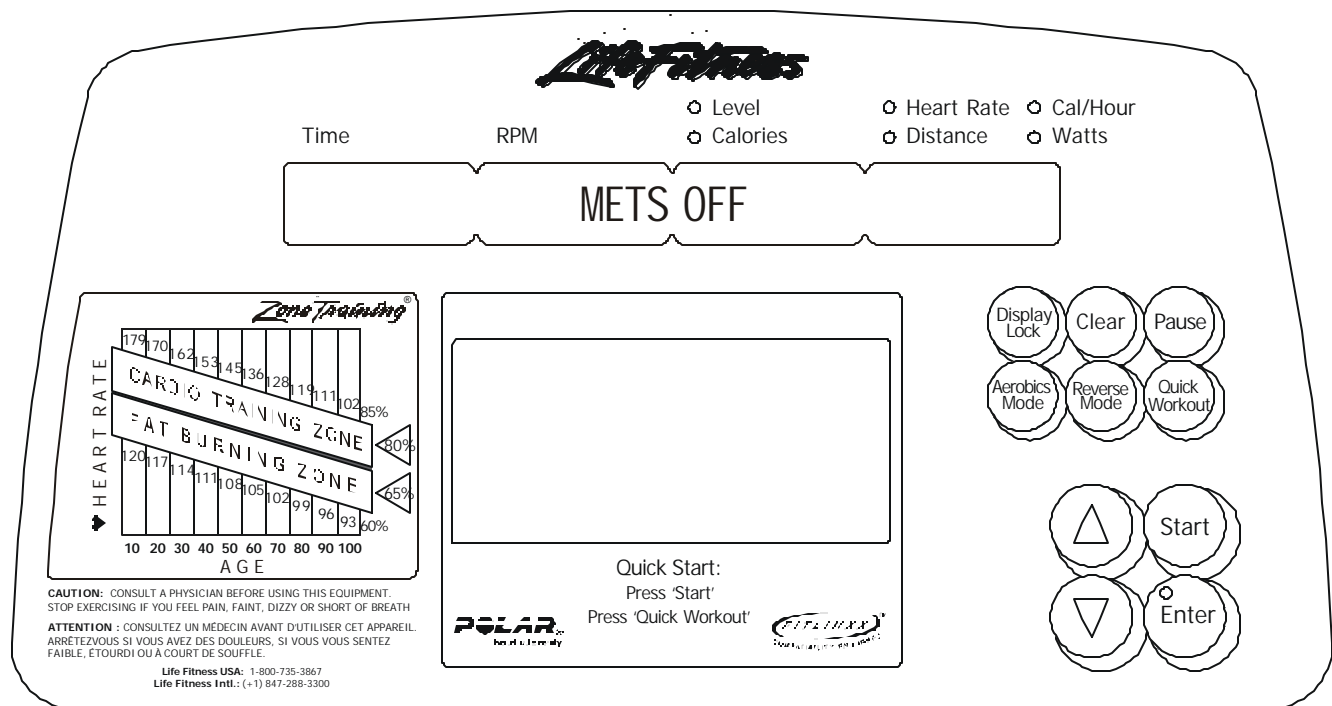
Press the CLEAR key to return to Diagnostic State 11.

Press the ENTER key to advance to Diagnostic State 13.

STATISTICS	
HOURS	Number of hours
HILL	Number of times
RANDOM	Number of times
MANUAL	Number of times
FAT	Number of times
CARDIO	Number of times
X-REV	Number of times
X-AERO	Number of times
QUICK	Number of times
HR-WIPE	Number of times wiping of hand sensor message

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

DIAGNOSTIC STATE 13 - METS ENABLE/DISABLE



Press the DOWN ARROW to disable the METS mode. Press the UP ARROW to enable the METS mode. METS is the expression of the rate of work (power output). One MET is approximately equal to a person's metabolism when seated and relaxed.

When the value is set to METS OFF default the ENTER key LED will illuminate.

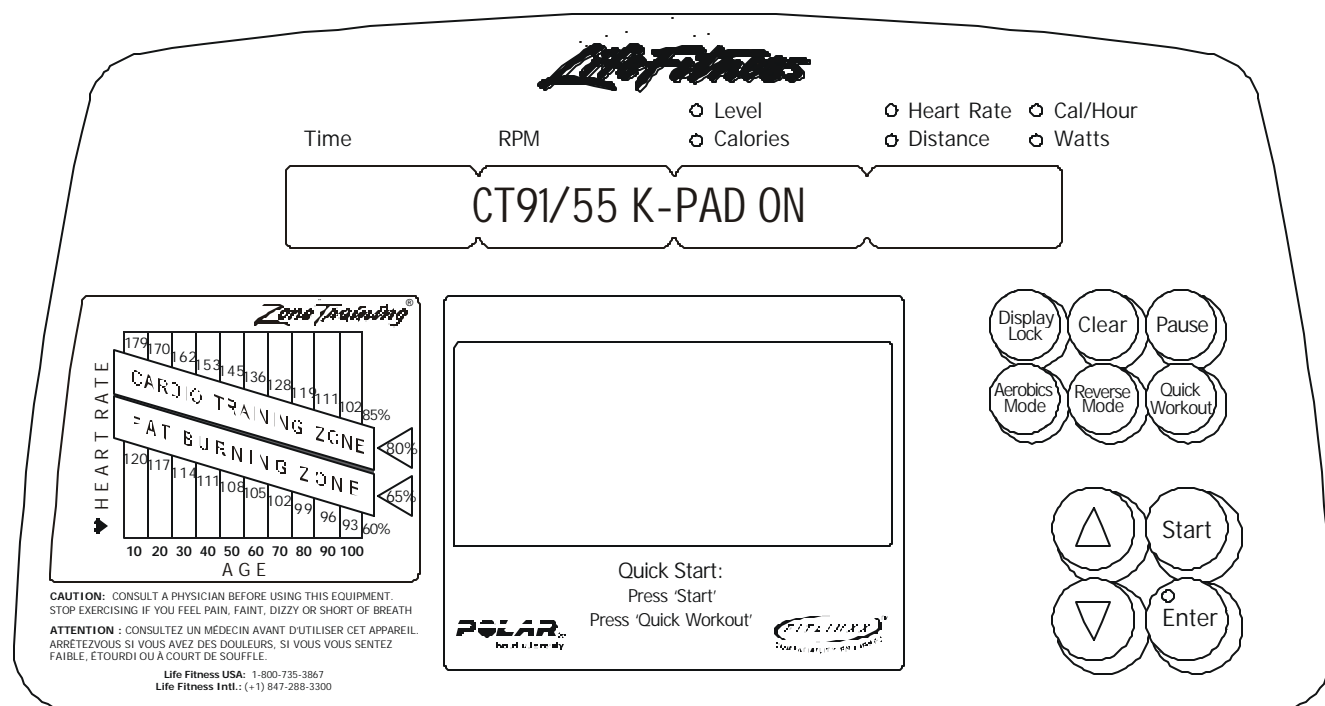
This value is stored in EEPROM and is stored when the cross-trainer is not in use.

Press the CLEAR key to return to Diagnostic State 12.

Press the ENTER key to advance to Diagnostic State 14.

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

DIAGNOSTIC STATE 14 - KEYPAD SELECTION



Section II

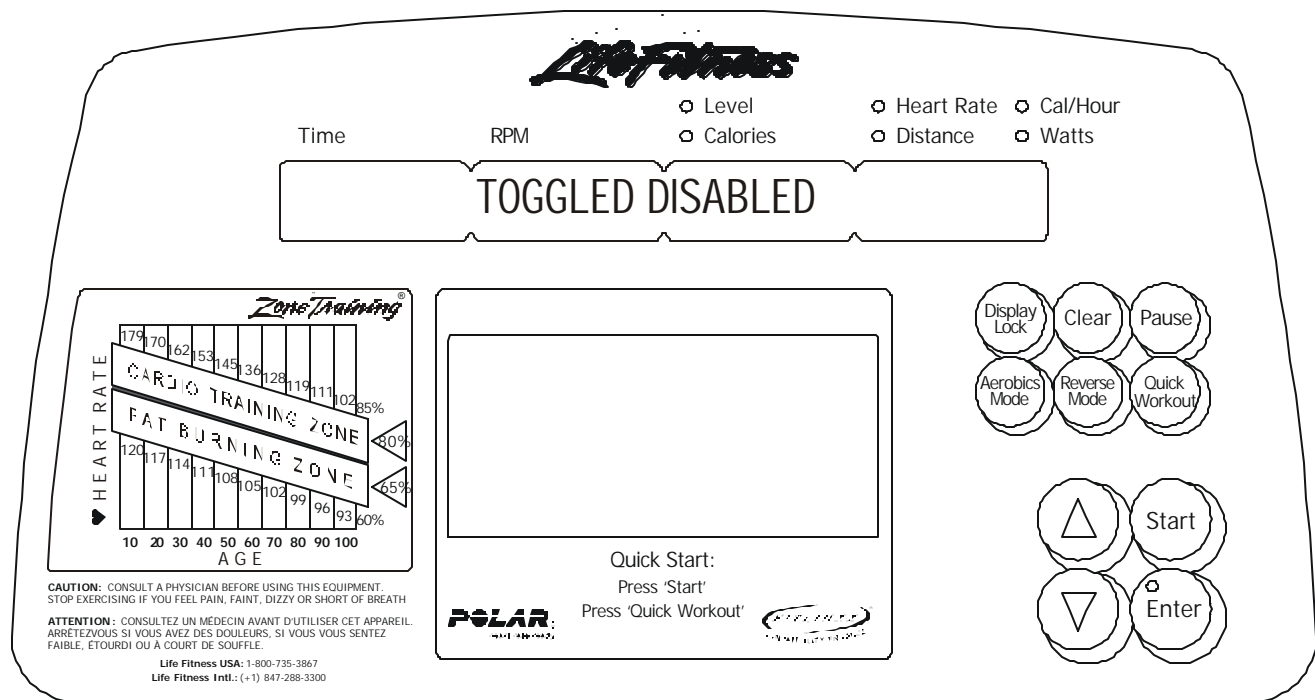
To select the appropriate keypad press the UP/DOWN ARROW keys for the designated model. Make sure that the system displays "CT9500 K-PAD ON," "CT91/55 K-PAD ON" or "CT8500 K-PAD ON" depending machine model.

Press the CLEAR key to return to Diagnostic State 13.

Press the ENTER key to advance to Diagnostic State 15.

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

DIAGNOSTIC STATE 15 - TOGGLE ENABLE/DISABLE



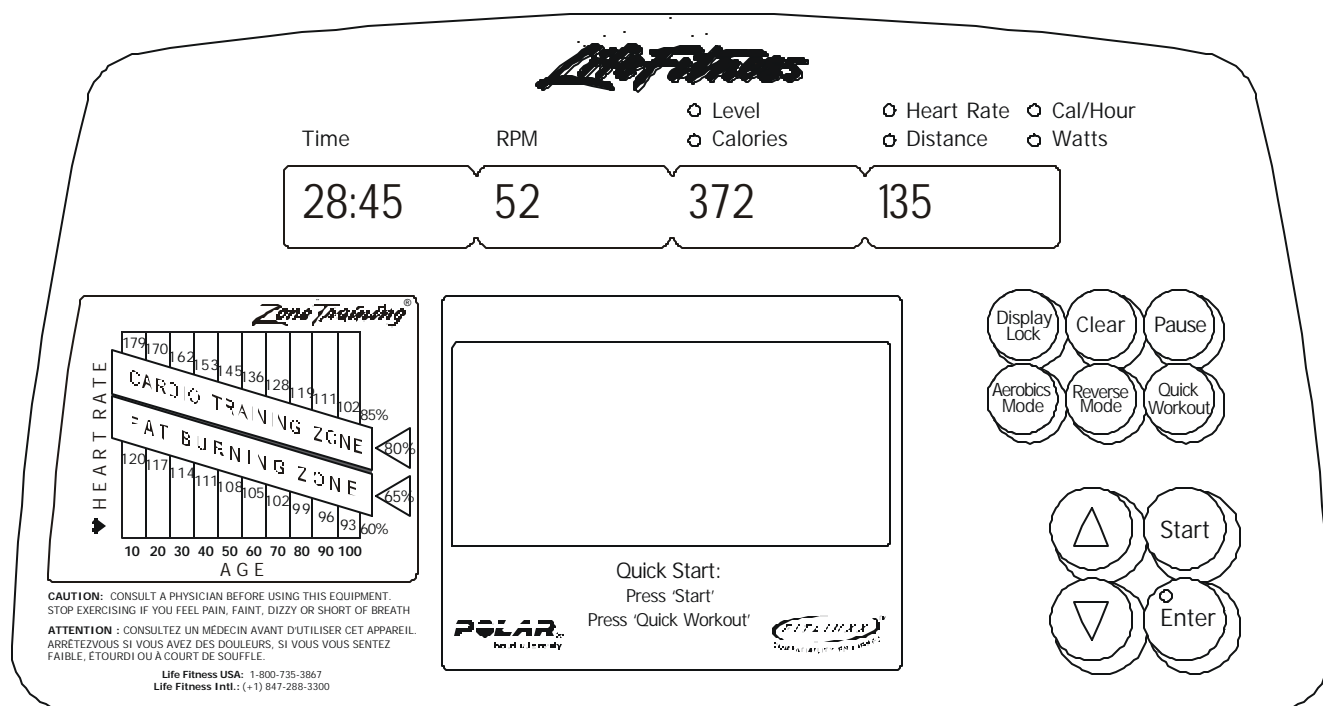
To select the appropriate default press the UP/DOWN ARROW keys until the message "TOGGLE DISABLED," "WATTS TOGGLE ON," "CAL/HR TOGGLE ON," or "CAL/HR WTTS TGGL" is displayed. These are different options the customer can select to have the display console toggle from one item to another.

Press the CLEAR key to return to Diagnostic State 14.

Press the ENTER key to advance to Diagnostic State 16.

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

DIAGNOSTIC STATE 16 – PHOTOSHOOT

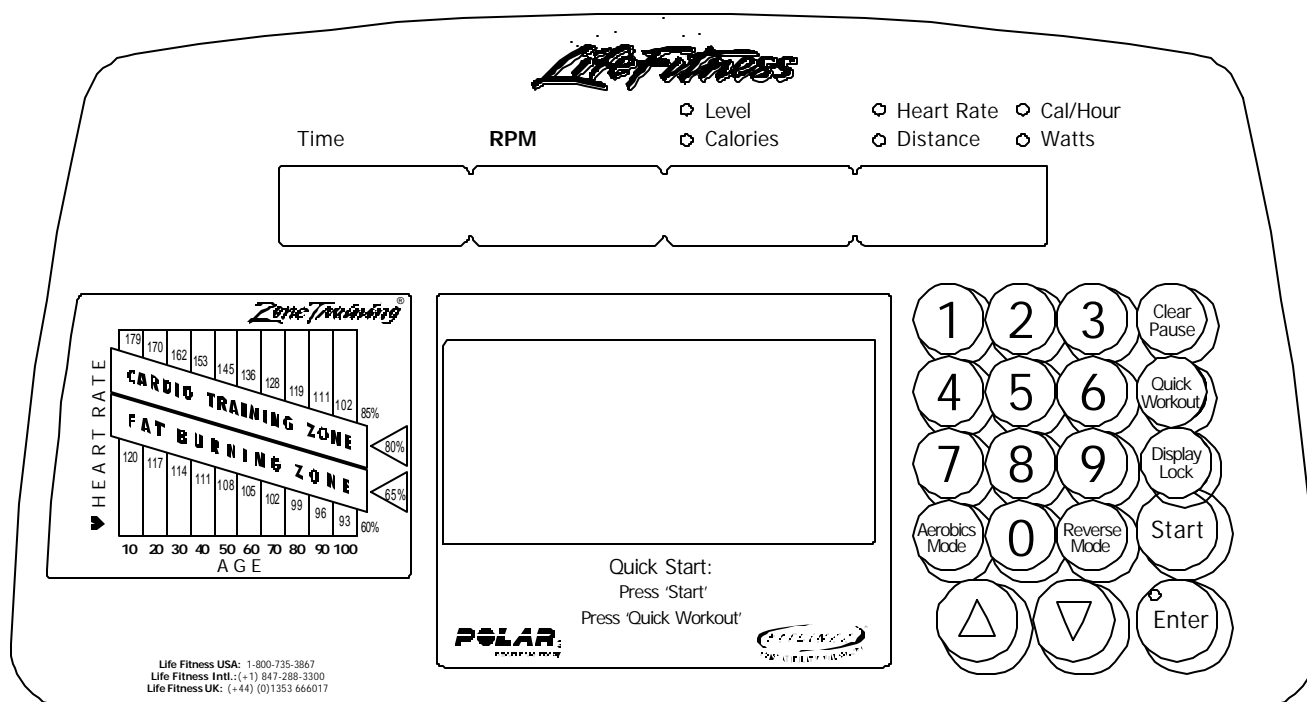


Section II

Display values that have no significance and are used strictly for photographic sessions to assimilate values in the display console.

Press the CLEAR key to return to Diagnostic State 15 or continue to press the CLEAR key to exit diagnostics.

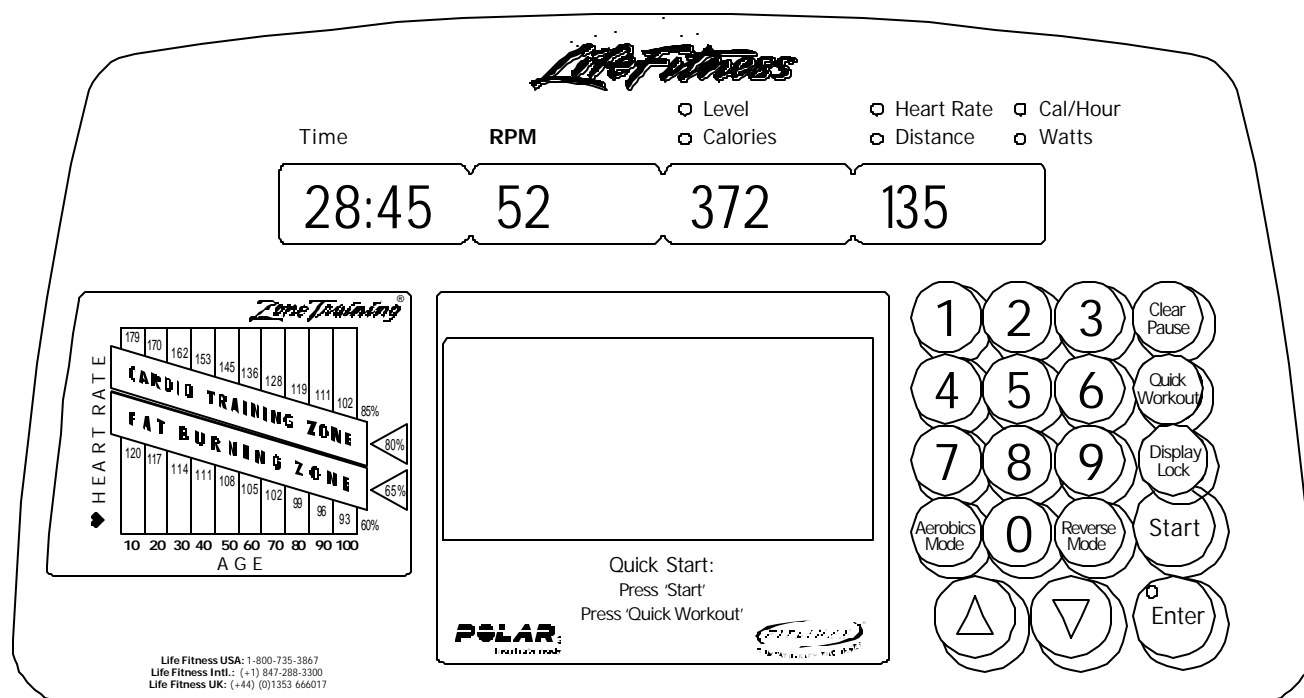
Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers
DIAGNOSTIC STATE 16 – LANGUAGE CONFIGURATION
 (DISPLAY LOCK EQUIPPED MODEL ONLY)



This test allows the user to select a language for the unit. Upon initial entry to this test, a message concerning the current configuration of the language is displayed. Following this message, the user can change the language by pressing the arrow key to scroll through the available list of language in the product. After the language has been selected, pressing Clear or Enter keys will cause the product to save the language selected.

DIAGNOSTIC STATE 17 – PHOTOSHOOT

(DISPLAY LOCK EQUIPPED MODEL ONLY)



Display values that have no significance and are used strictly for photographic sessions to assimilate values in the display console.

Press the CLEAR key to return to Diagnostic State 16 or continue to press the CLEAR key to exit diagnostics.

NOTES:

SECTION III

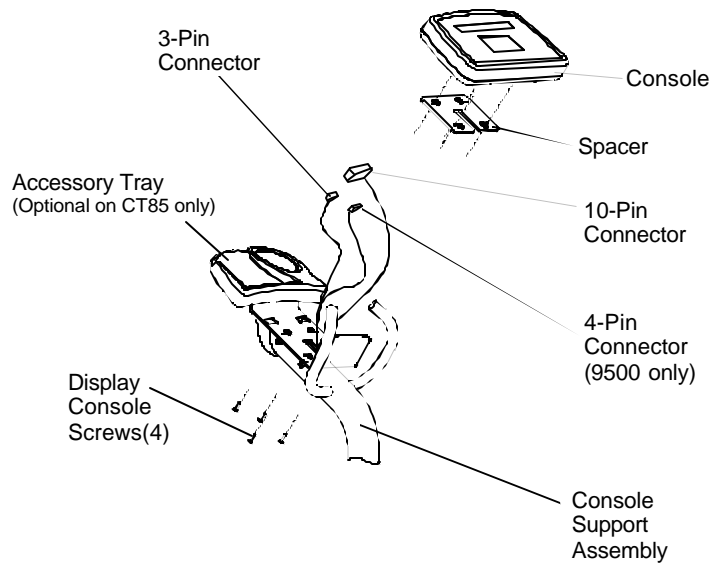
“How To...” SERVICE AND REPAIR GUIDE

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

How To... Replace the Display Console

Tools required: Phillips screwdriver

1. Remove the MOUNTING SCREWS(4) from under the CONSOLE.
2. Lift the console up enough to disconnect the 10-Pin and 3 or 4-Pin connectors.
3. Remove the console and spacer from the console post or if equipped, the accessory tray which is standard on CT95/91 and optional on CT85.
4. Install new console in reverse order.

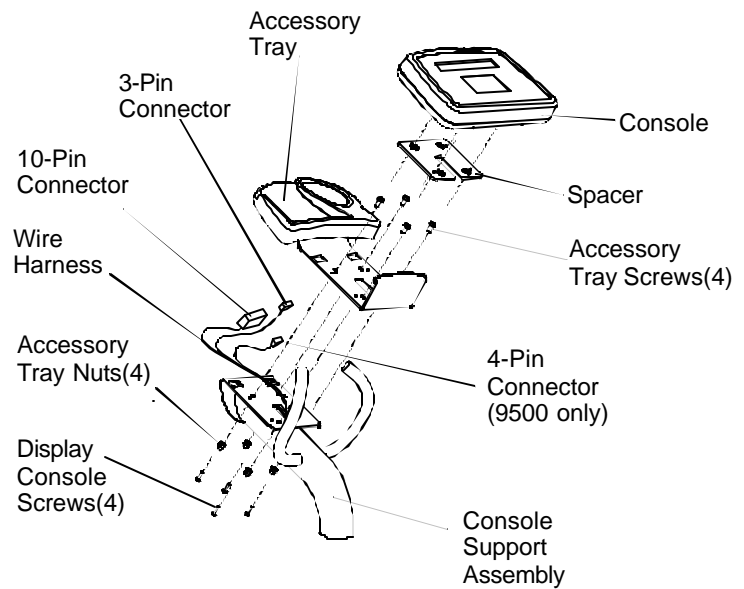


Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

How To... Replace the Accessory Tray (Optional on CT8500)

Tools required: Phillips screwdriver, Allen wrench set, and 3/8" Standard wrench set

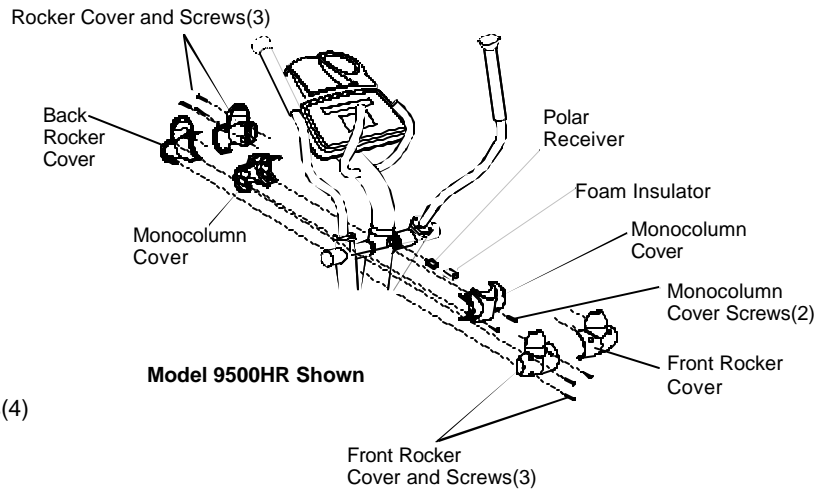
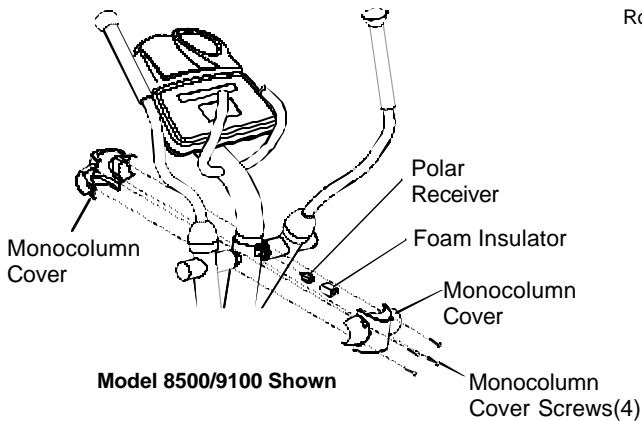
1. Remove the MOUNTING SCREWS(4) from under the CONSOLE.
2. Lift the console up enough to disconnect the 10-Pin, 3-Pin or 4-Pin connectors.
3. Remove the console and spacer from the accessory tray.
4. Remove the ACCESSORY TRAY BOLTS(4) and NUTS(4), and lift off the ACCESSORY TRAY from the console post.
5. Install new accessory tray in reverse order.



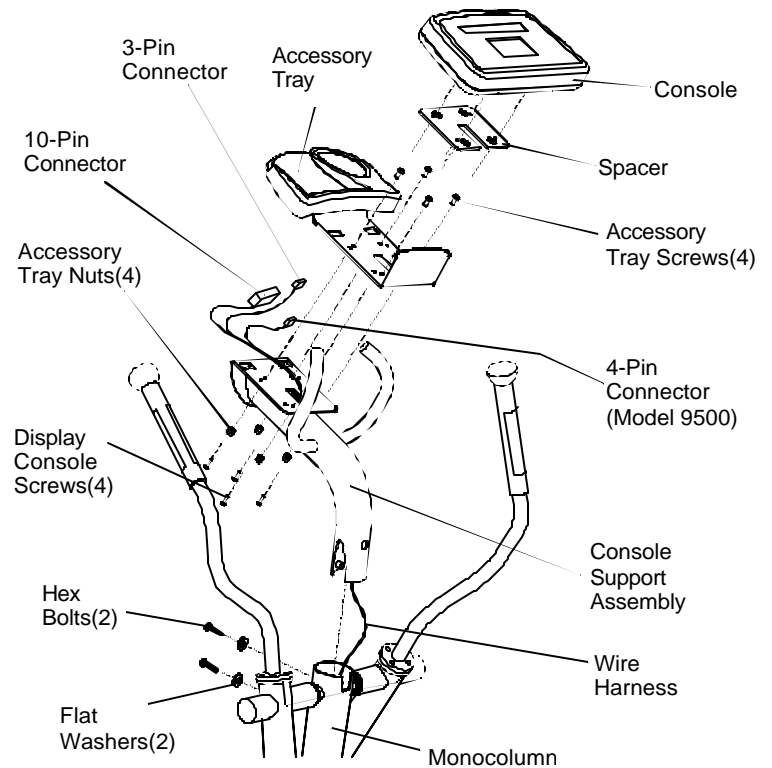
Life Fitness Models 8500, 9100, and 9500HR Cross-Trainers

How To... Replace the Display Console Support Assembly

Tools required: Phillips screwdriver and Allen wrench set



1. Remove the console and accessory tray. See "How To."
2. Remove the MONOCOLUMN COVER (ALL MODELS) and ROCKER ARM COVERS (9500).
3. Remove the POLAR RECEIVER.
4. Remove the two(2) HEX HEAD CAPSCREWS and FLAT WASHERS securing the CONSOLE SUPPORT ASSEMBLY.
5. Lift the CONSOLE POST out of the MONOCOLUMN while guiding the wire harness out.
6. Install new console support in reverse order.



Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

How To... Replace The Rear Covers

Tools required: Phillips magnetic screwdriver #2, Allen wrench set, 3/8" Socket set, and Standard wrench set

1. Remove the OUTER LINK COVER by removing six(6) mounting screws from each OUTER LINK COVER.

2. Remove the ANTI-LIFT BRACKET by removing two(2) mounting bolts from each bracket.

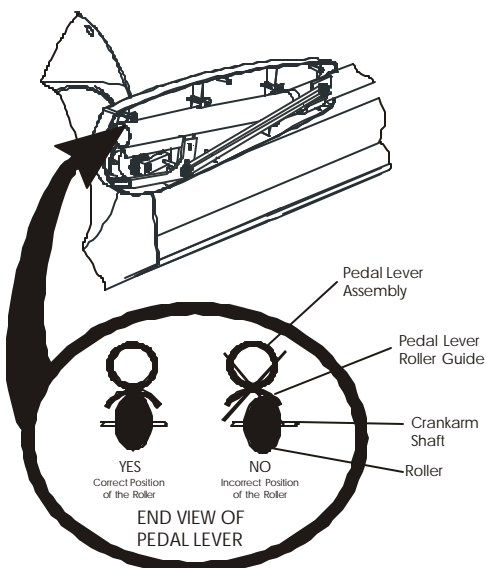
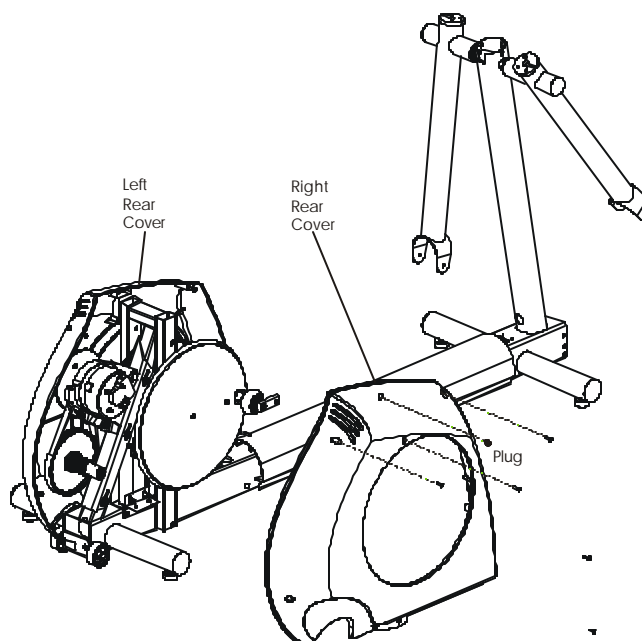
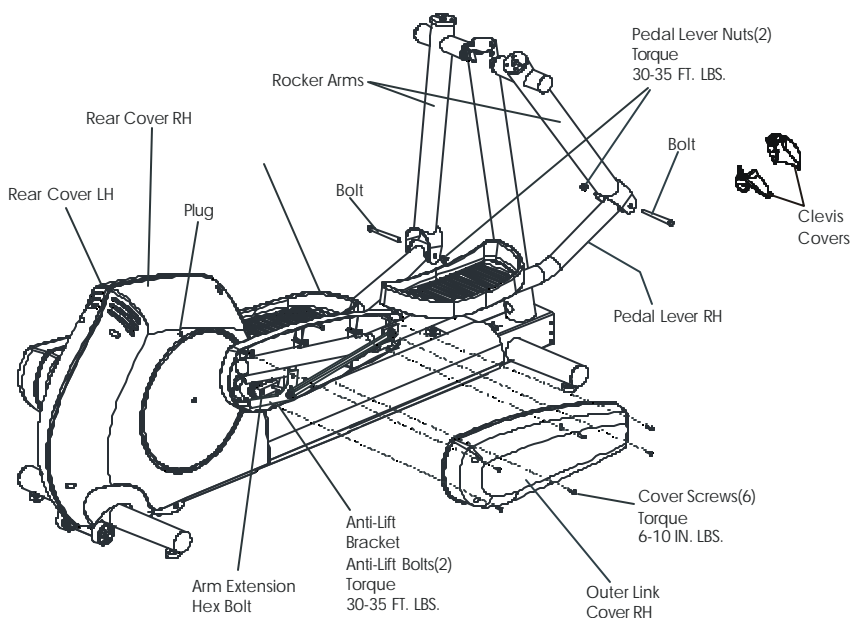
3. Remove the clevis cover from each pedal lever.

4. Remove the PEDAL LEVER by removing the mounting bolt and nut at each ROCKER ARM joint and the hex bolt from each ARM EXTENSION.

5. Remove the PLUG from the LEFT and RIGHT COVERS.

6. Remove the REAR COVER by removing three(3) screws from the LEFT REAR COVER then seven(7) screws from the RIGHT REAR COVER.

7. Install rear covers in reverse order. Make sure that each pedal lever roller guide is centered over the roller. If not, loosen the pedal lever assembly mounting bolt and recenter the pedal lever so that it is centered on the roller, then retighten the



mounting bolt.

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

How To... Replace The Crankarm Roller Assembly and Cover

Tools required: Snap ring pliers and Allen wrench set, and Phillips screwdriver

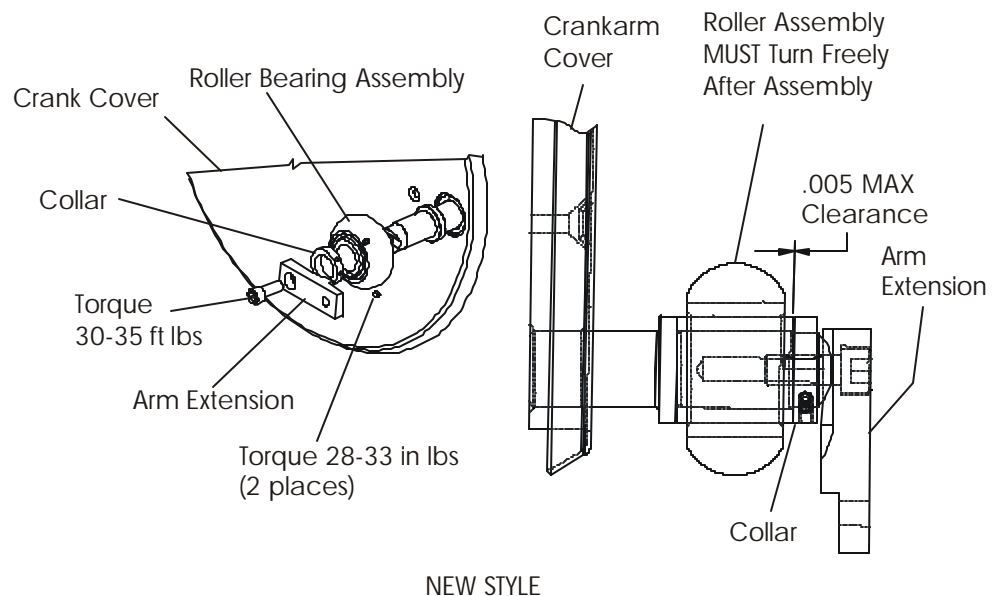
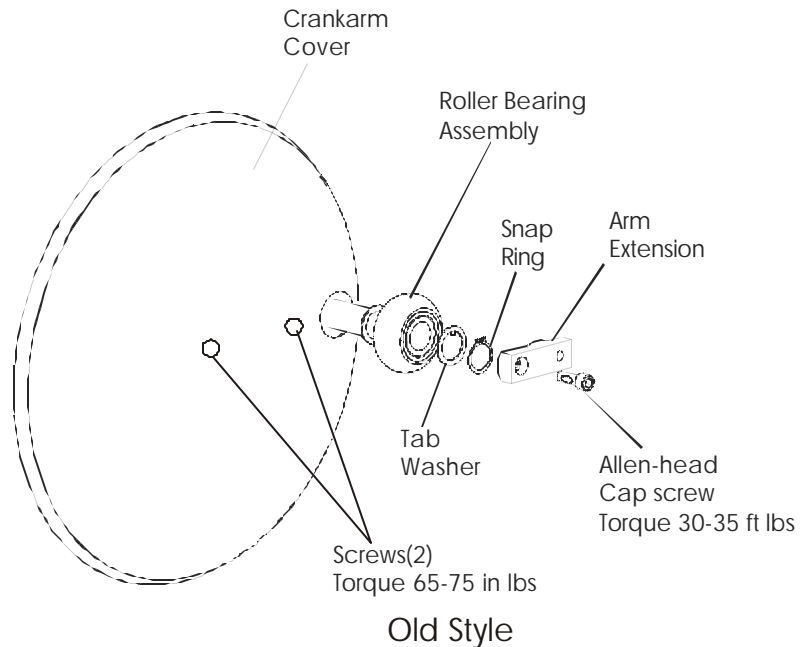
1. Remove the REAR COVERS. See How To... Remove Rear Covers.

2. Remove the ALLEN-HEAD CAPSCREW from the end of the ARM EXTENSION.

3. Remove the SNAP RING, TAB WASHER and ROLLER BEARING ASSEMBLY on Old configuration assembly. For New configuration assembly, remove the setscrew and collar, then remove the roller bearing assembly.

4. Remove the two(2) countersunk screws securing the crankarm cover to the crankarm, and remove the CRANKARM COVER.

5. Install the CRANKARM COVER and ROLLER BEARING in the reverse order. For new style roller bearing assemblies, make sure that a maximum of .005" clearance is maintained between the ROLLER BEARING and the COLLAR.

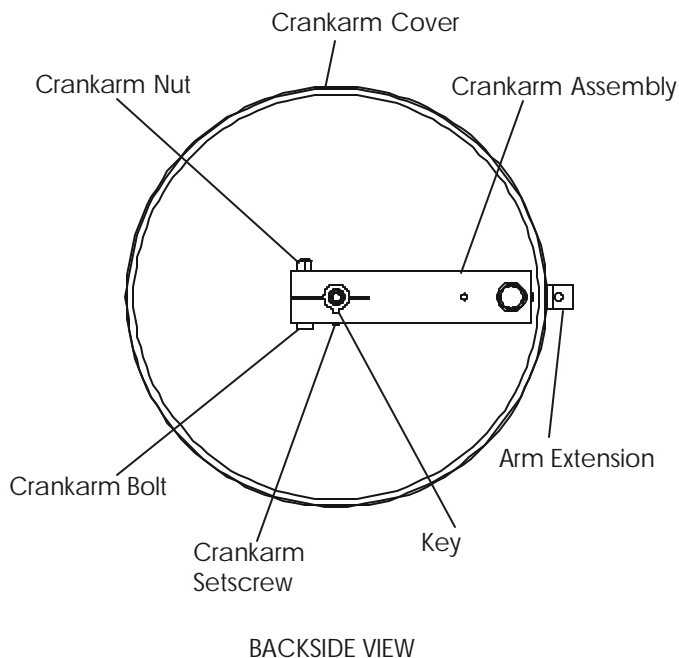
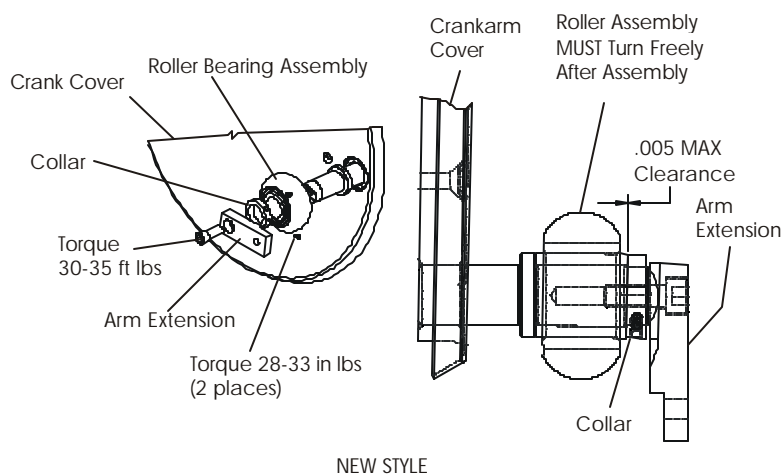
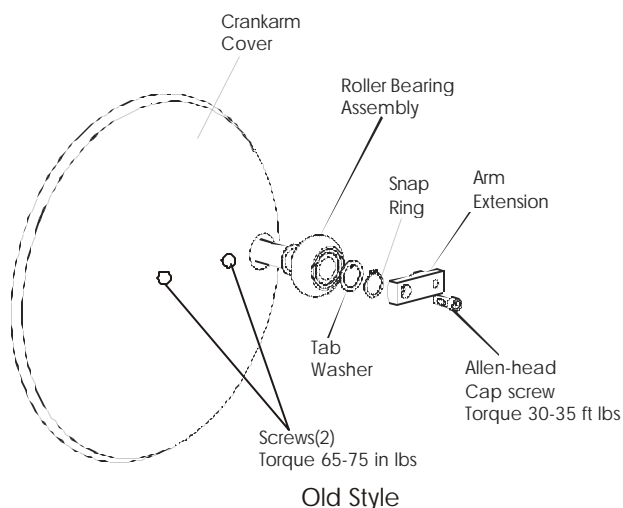


Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

How To... Replace The Crankarm Assembly

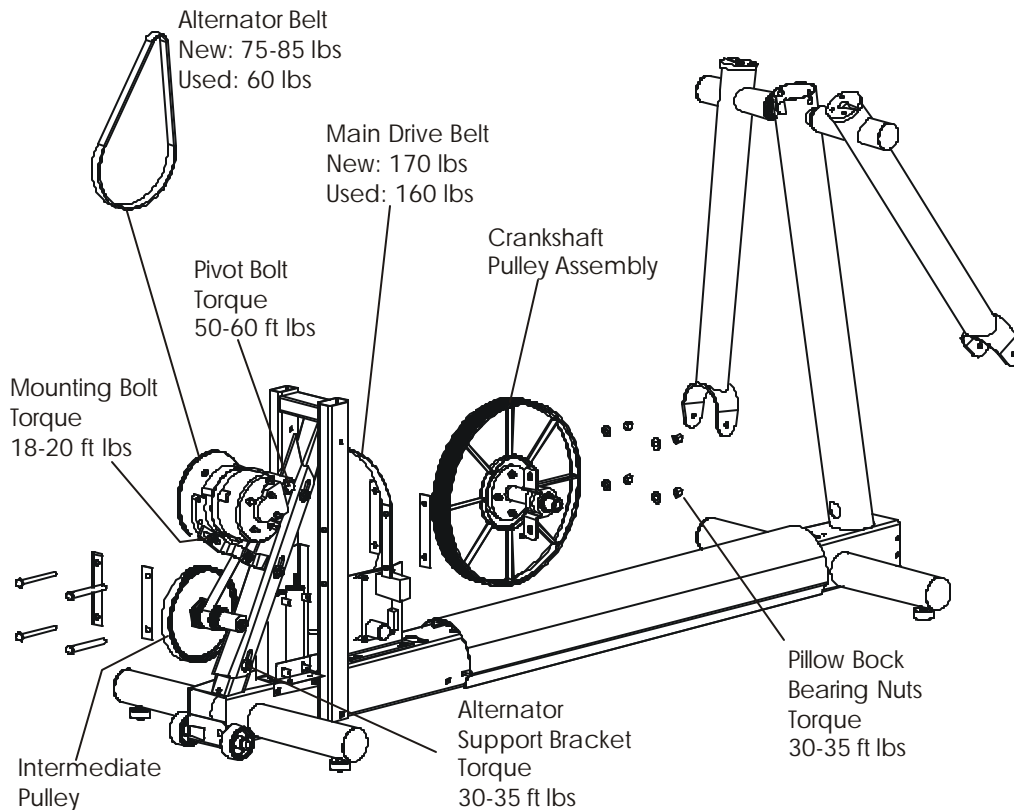
Tools required: Snap ring pliers and Allen wrench set, and Phillips screwdriver

1. Remove the REAR COVERS. See How To... Remove Rear Covers.
2. Remove the ALLEN-HEAD CAPSCREW from the end of the ARM EXTENSION.
3. Remove the SNAP RING, TAB WASHER and ROLLER BEARING ASSEMBLY on Old configuration assembly. For New configuration assembly, remove the SETSCREW and COLLAR, then remove the roller bearing assembly.
4. Remove the two(2) countersunk screws securing the crankarm cover to the crankarm, and remove the CRANKARM COVER.
5. Remove the NUT and BOLT from the CRANKARM.
6. Remove the SETSCREW and KEY from the CRANKARM.
7. Remove the CRANKARM off the shaft.
8. Install the CRANKARM COVER and ROLLER BEARING in the reverse order. For new style roller bearing assemblies, make sure that a maximum of .005" clearance is maintained between the ROLLER BEARING and the COLLAR.



Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers **How To... Replace The Drive Belt and Alternator Belt**

Tools required: 3/8" Socket set and Standard wrench set, and Phillips screwdriver



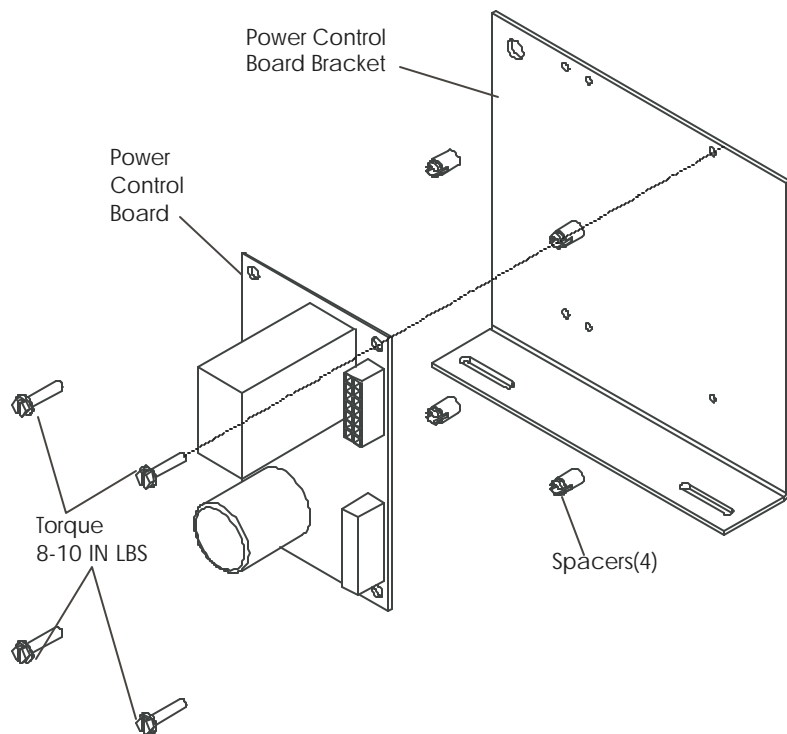
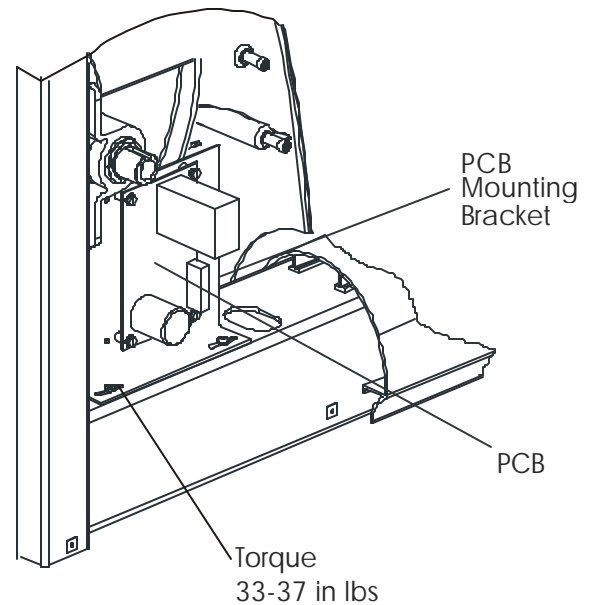
1. Remove the both REAR COVERS. See How To...Remove Rear Covers.
2. Loosen the ALTERNATOR PIVOT BOLT and release tension on the alternator belt, then remove the ALTERNATOR BELT off the INTERMEDIATE PULLEY.
3. Loosen the five(5) mounting bolts on the ALTERNATOR BRACKET and move the bracket upward and remove the DRIVE BELT off the crankshaft pulley assembly.
4. Remove the CRANKSHAFT PULLEY ASSEMBLY by removing four(4) mounting bolts at the PILLOW BLOCK BEARINGS.
5. Remove and discard the DRIVE BELT.
6. Install new drive belt and alternator belt in reverse order.

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

How To...Remove Power Control Board Assembly

Tools Required: Slotted head screwdriver and Phillips screwdriver

1. Remove the right REAR COVER. See How To...Remove Rear Covers.
2. Disconnect the 12 and 11-Pin Connectors on the PCB.
3. Remove the PCB from its mounting bracket.
4. Install new PCB in reverse order.

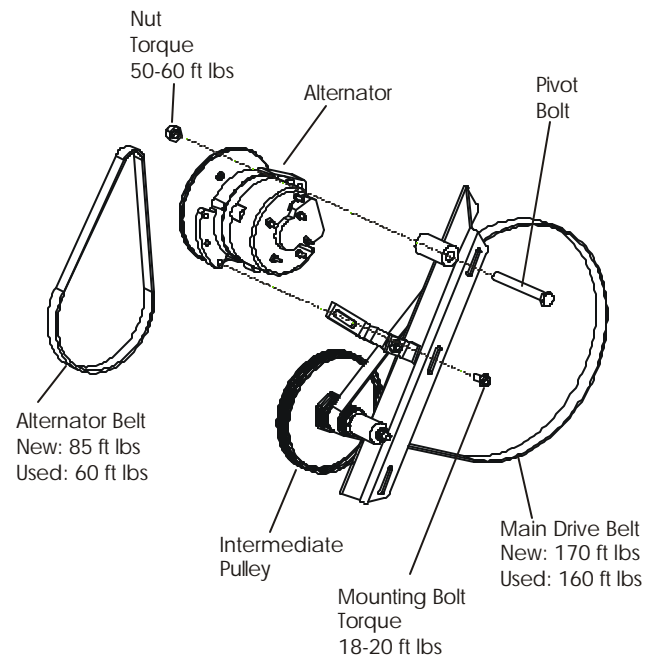
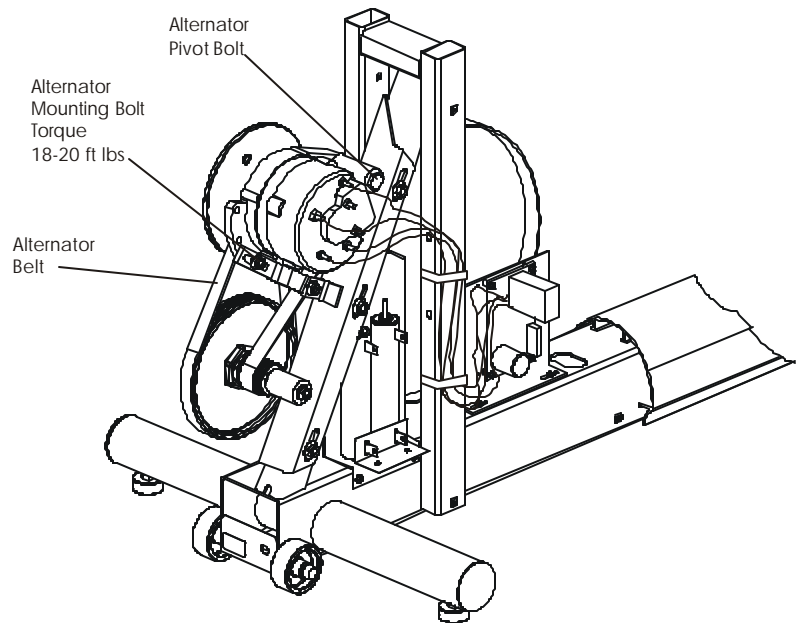


Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

How To...Replace Alternator

Tools Required: 3/8" Socket set and Standard wrench set, and Phillips screwdriver

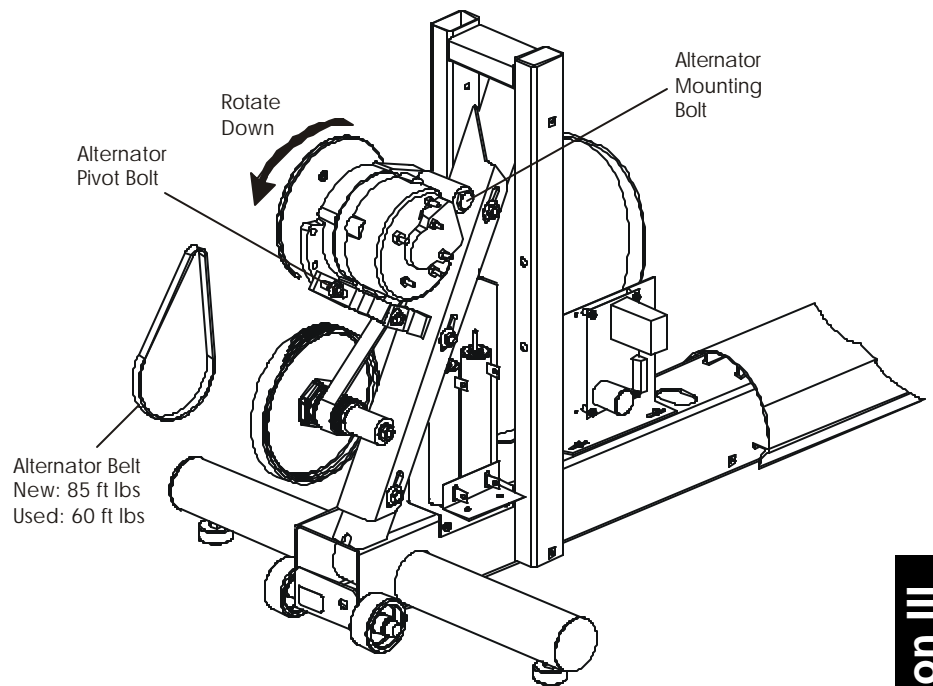
1. Remove the REAR COVERS. See How To...Remove Rear Covers.
2. Disconnect the ALTERNATOR WIRING HARNESS from the alternator.
3. Remove the ALTERNATOR PIVOT BOLT and MOUNTING BOLT, then lift out the alternator.
4. Install new alternator in reverse order.



How To...Replace Alternator Belt

Tools Required: 3/8" Socket set and Standard wrench set, and Phillips screwdriver

1. Remove the REAR COVERS. See How To...Remove Rear Covers.
2. Loosen the ALTERNATOR PIVOT BOLT and its MOUNTING BOLT.
3. Rotate the alternator down to release belt tension, then remove the ALTERNATOR BELT.
4. Install new alternator belt in reverse order.



Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

How To... Replace Pedal Lever Assembly

Tools required: Phillip screwdriver, Allen wrench set, 3/8" Socket set, and Standard wrench set

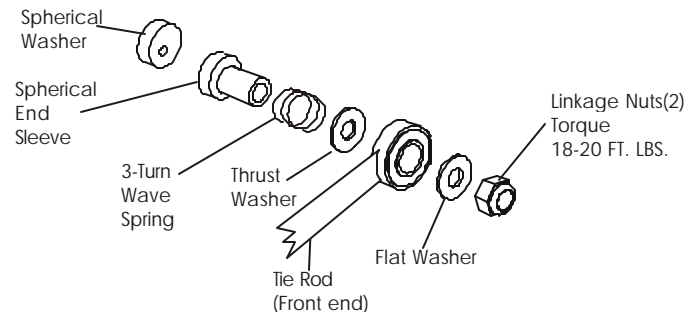
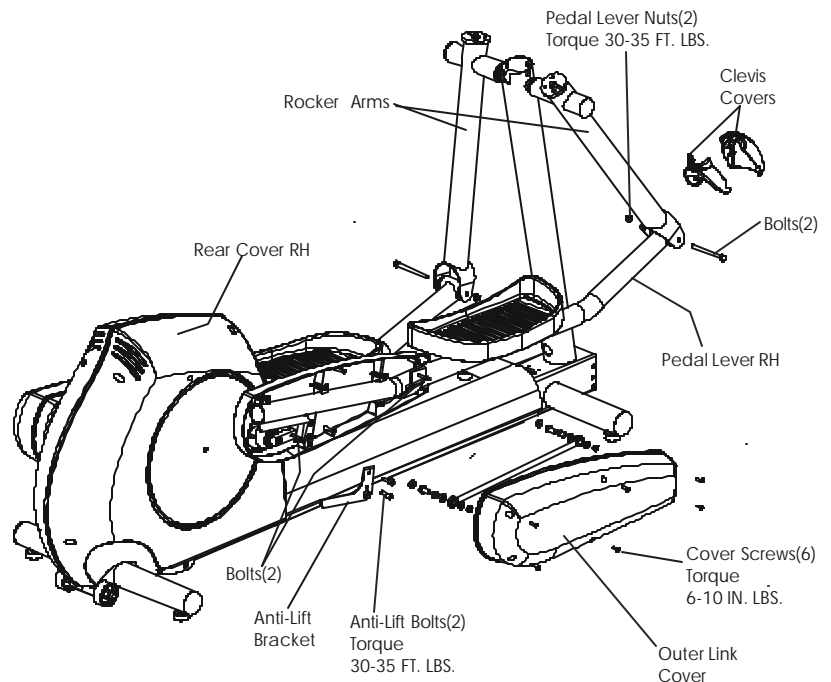
1. Remove six(6) screws from the OUTER LINK COVER and remove cover.
2. Remove the TIE ROD.
3. Remove the CLEVIS COVER from each pedal lever.
4. Remove the ANTI-LIFT BRACKET and lower the PEDAL LEVER ASSEMBLY.
5. Remove the nut and bolt securing the pedal lever to the ROCKER ARM, and remove the pedal lever.
6. Remove the inner link cover screws(4) and remove the inner link cover.
7. Install new pedal lever in reverse order except as follow:

A) When tightening the clevis to the pedal lever bolt, the pedal lever track must be resting on the roller on the crankarm. See illustration below.

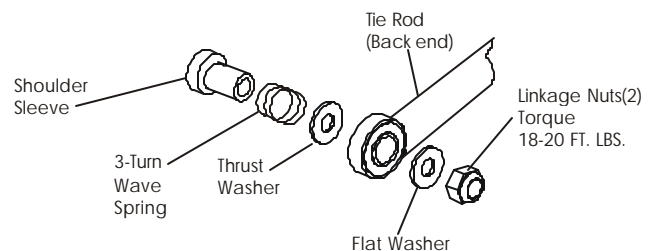
B) The identificaion mark on the tie rod must be forward.

C) An identification mark on the tie rod must face towards the front of the machine. Using a small amount of Moly grease between the inner race of the bearing and sleeve, attach the tie rod at the rear of the machine first, then at the front.

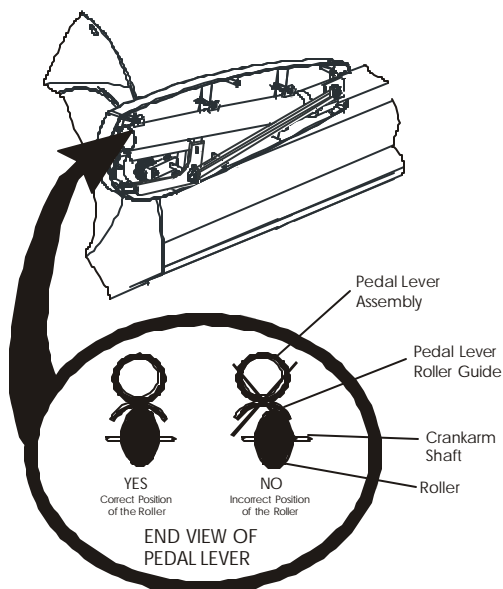
D) Use a small amount of grease between the spherical washer and the spherical end sleeve.



Front End View



Back End View

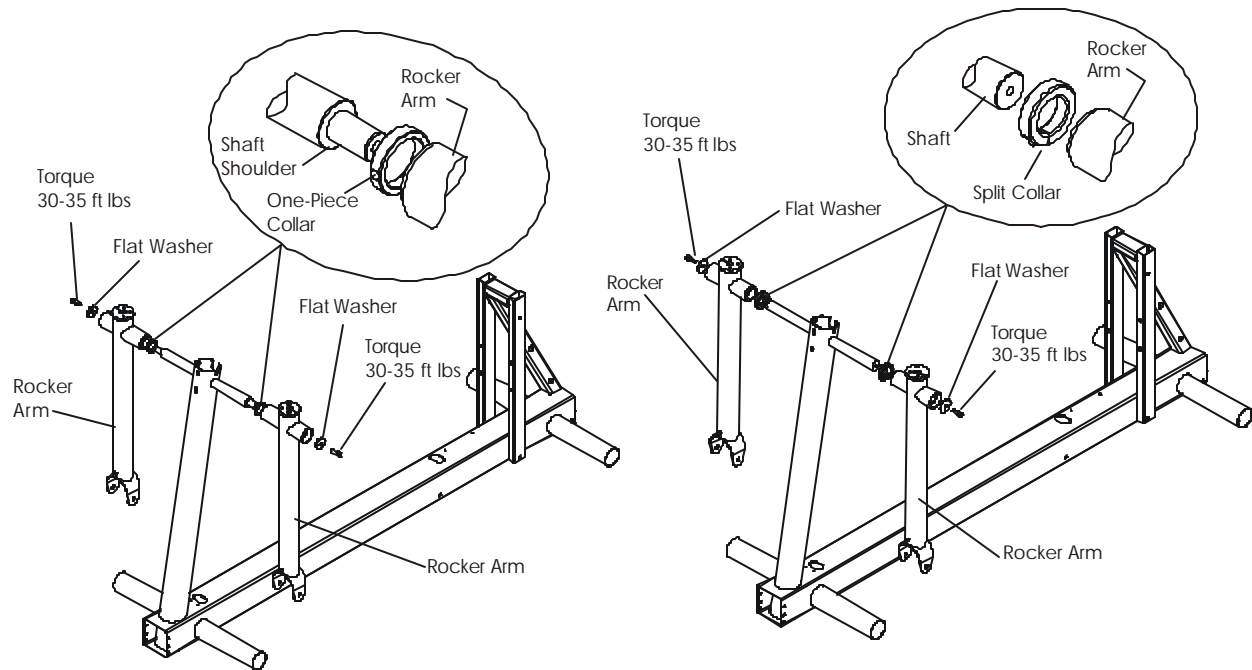
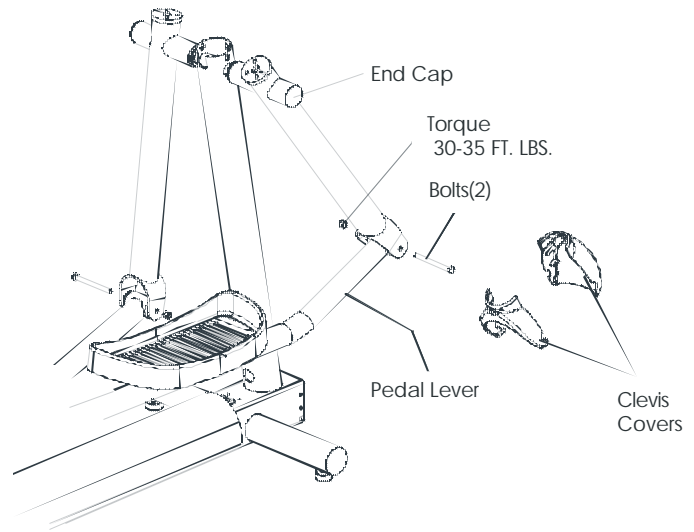


Life Fitness Models 8500, 9100, and 9500HR Cross-Trainers

How To... Replace Rocker Arms

Tools required: 3/8 Socket set and Standard wrench set

1. Remove the UPPER ARMS. See How To...Replace User Arms.
2. Remove the MONOCOLUMN COVERS and CLEVIS COVERS.
3. Remove the clevis cover from each pedal lever.
4. Remove the nut and bolt securing the PEDAL LEVER to the ROCKER ARM, and lower the pedal lever.
5. Remove the END CAP from the rocker arm.
6. Remove bolt and washer and slide-off the rocker arm.
7. Install new rocker arm in reverse order.
8. Units with split collar design, make sure to position to within .005" gap of rocker arm. Units with one-piece collars, make sure collar is positioned against shaft shoulder.



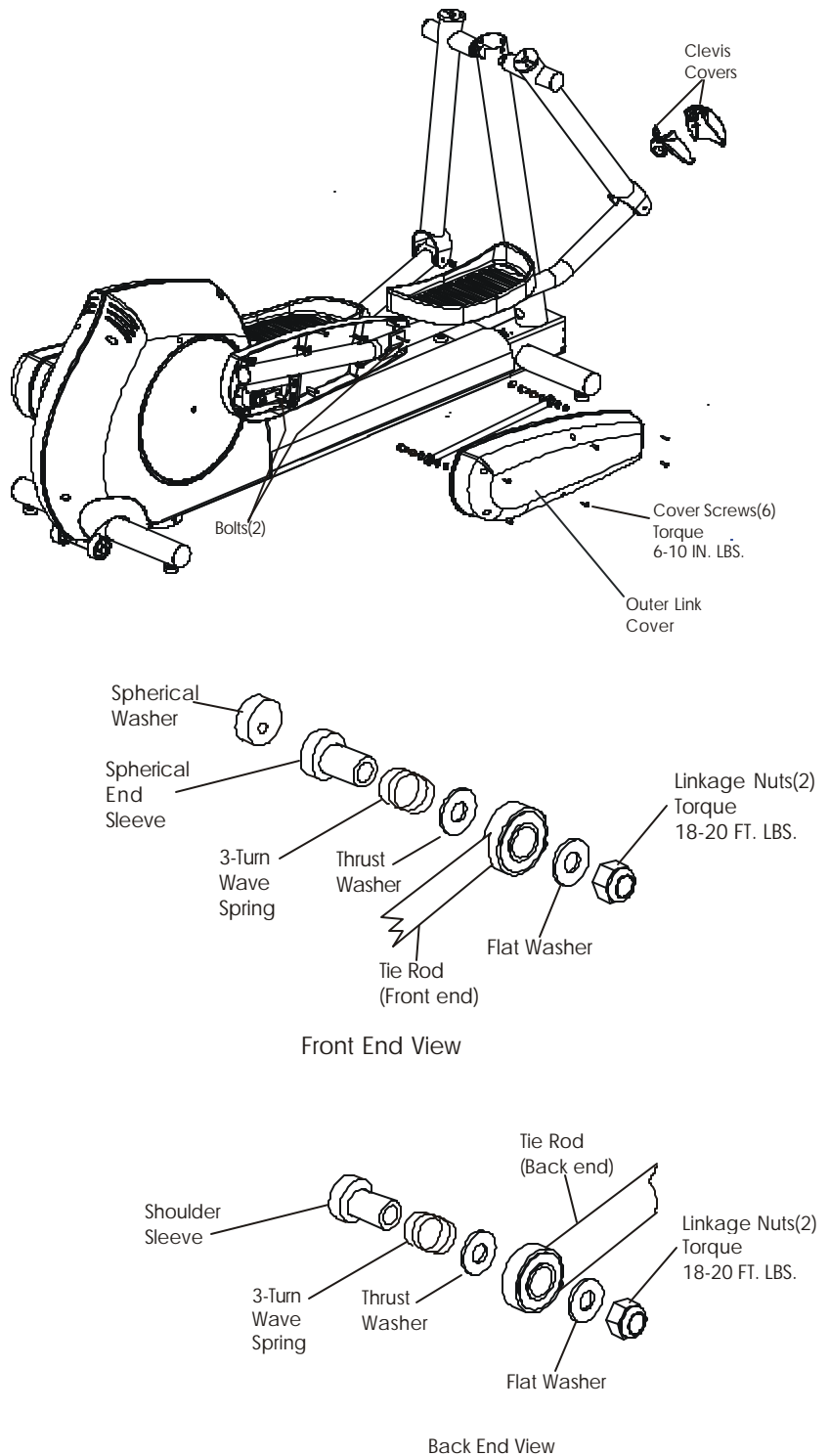
Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

How To... Replace Tie Rod

Tools required: Phillips magnetic screwdriver #2 and 3/8 Socket set

1. Remove the OUTER LINK COVER by removing the six(6) mounting screws.
2. Remove the TIE ROD NUT from the ARM EXTENSION and PEDAL ARM.
3. Discard the tie rod and hardware.
4. Install new TIE ROD in reverse order.

NOTE: An identification mark on the tie rod must face towards the front of the machine. Using a small amount of Moly grease between the inner race of the bearing and sleeve, attach the tie rod at the rear of the machine first, then at the front.

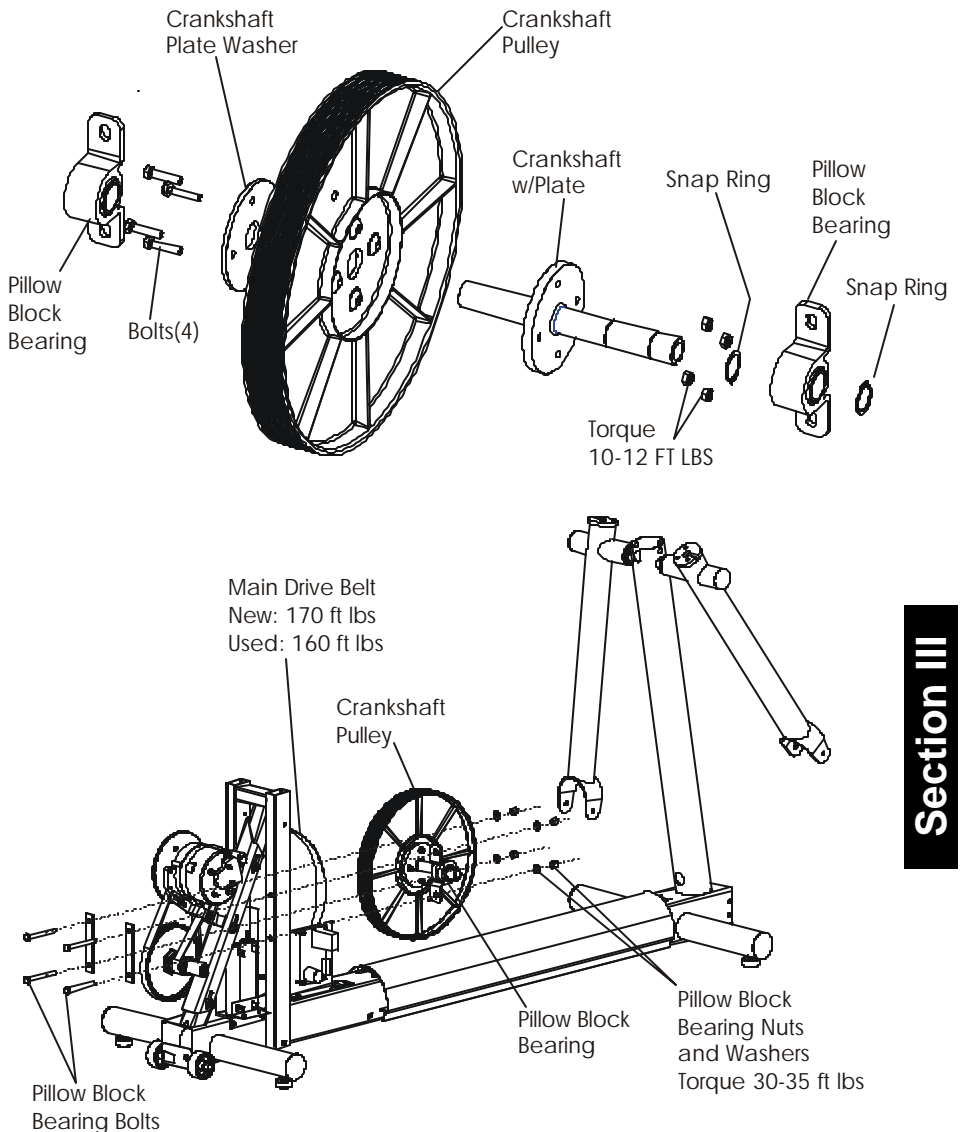


Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

How To... Replace Crankshaft Pulley Assembly

Tools required: Allen wrench set, 3/8" Socket set, and Standard wrench set

1. Remove the REAR COVERS. See How To...Remove Rear Covers.
2. See How To...Remove Alternator Belt.
3. Loosen six(6) mounting bolts on the ALTERNATOR SUPPORT BRACKET. Push this bracket up to remove tension on the DRIVE BELT, and remove the drive belt.
4. Remove four(4) bolts from the CRANKSHAFT PULLEY ASSEMBLY by removing four(4) mounting bolts at the PILLOW BLOCK BEARINGS.
5. Replace components on the crankshaft pulley assembly as necessary.
6. Install new crankshaft pulley in reverse order.

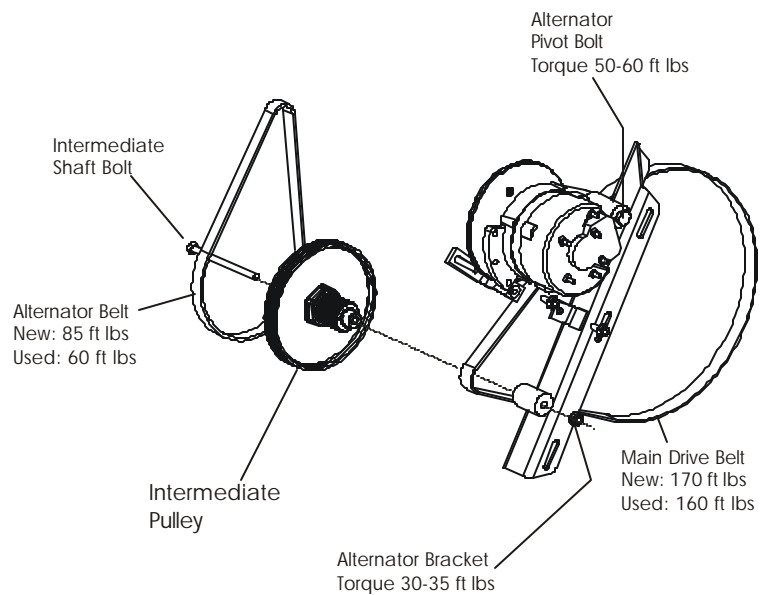
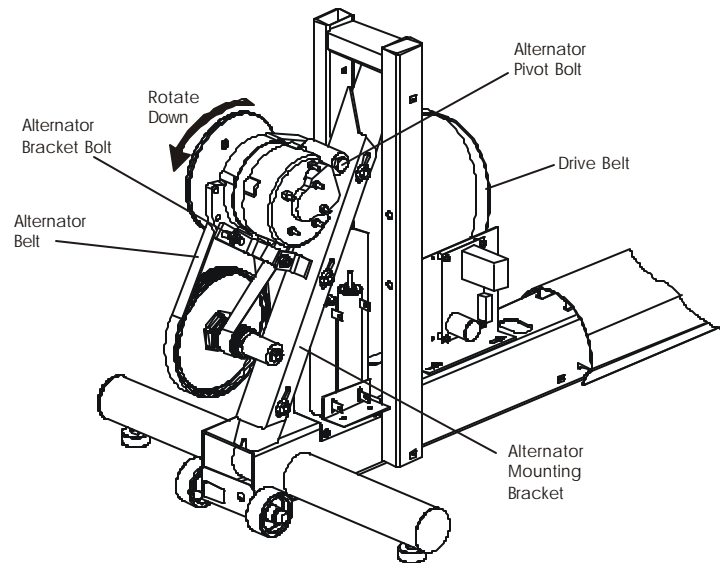


Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

How To... Replace The Intermediate Pulley

Tools required: 3/8" Socket set and Standard wrench set

1. Remove the REAR COVERS. See How To...Remove Rear Covers.
2. Loosen the ALTERNATOR PIVOT BOLT and rotate the alternator down to relieve belt tension.
3. Loosen the belt tension on the INTERMEDIATE PULLEY by loosening the five(5) bolts on the ALTERNATOR MOUNTING BRACKET.
4. Remove the INTERMEDIATE SHAFT BOLT and the INTERMEDIATE PULLEY.
5. Install new INTERMEDIATE PULLEY in reverse order.

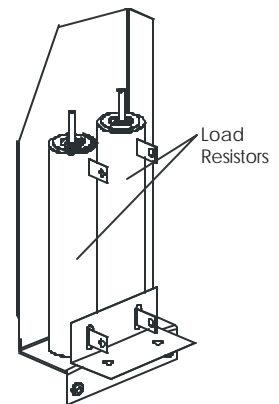
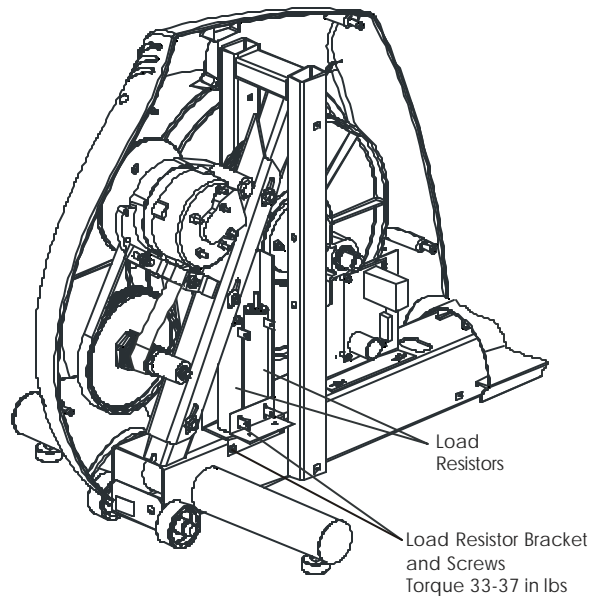


Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

How To... Replace Load Resistors

Tools required: Slotted screwdriver

1. Remove the right REAR COVER.
See How To...Remove Rear Covers.
2. Disconnect wires at the LOAD RESISTORS.
3. Remove the LOAD RESISTORS by removing two(2) hex-head screws securing the load resistor to the frame.
4. Install new load resistors in reverse order.

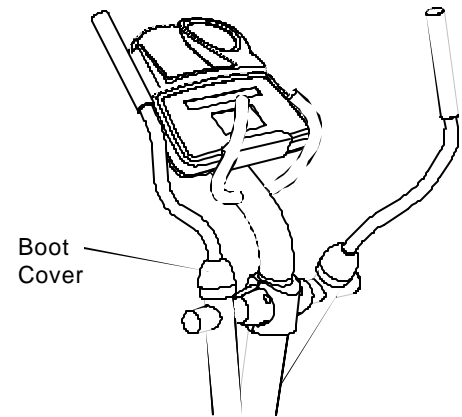


Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

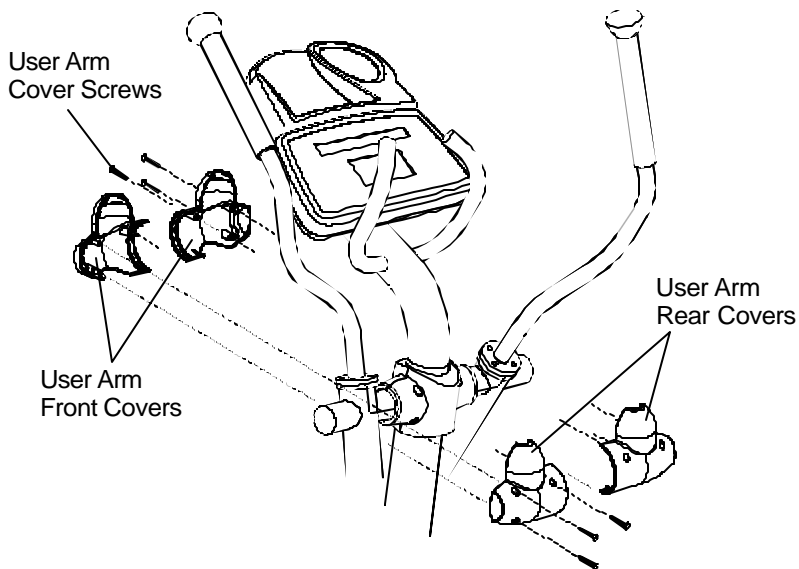
How To... Replace The User Arms

Tools required: Allen wrench set and Phillips screwdriver

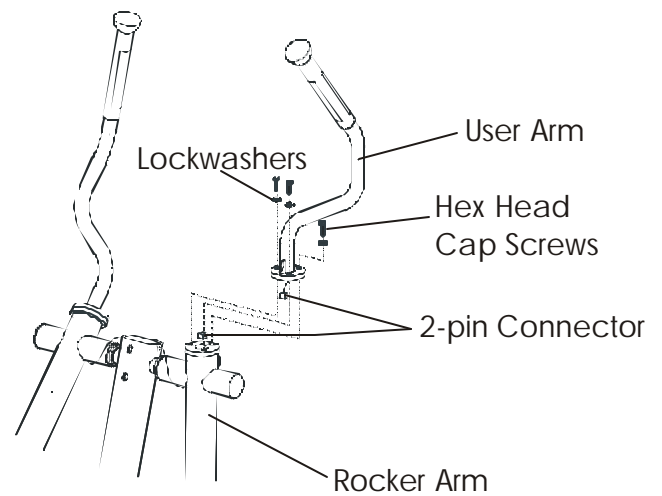
1. **MODELS 8500 and 9100:** Raise the BOOT COVERS on the UPPER ARMS.
MODEL 9500: Remove four(4) mounting bolts from the USER ARM REAR COVERS and remove these covers.
2. Remove three(3) MOUNTING BOLTS from each UPPER ARM and lift off the user arm. Units with Heart Rate, disconnect electrical connector.
3. Install new user arms in reverse order.



Model 8500/9100



Model 9500



Model 9500HR

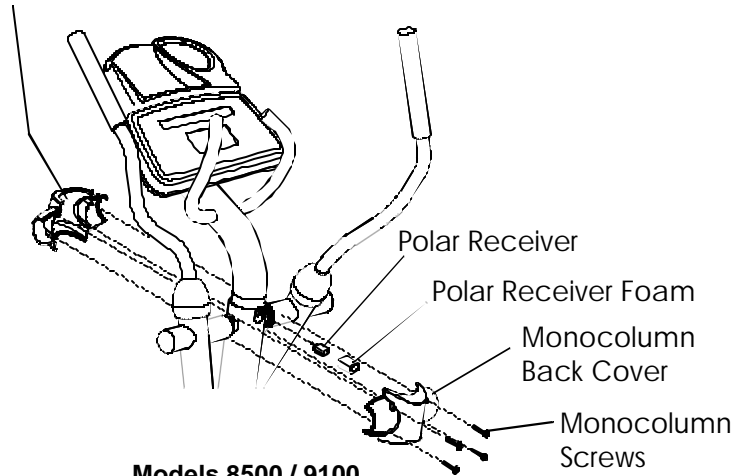
Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

How To... Replace The Polar Receiver

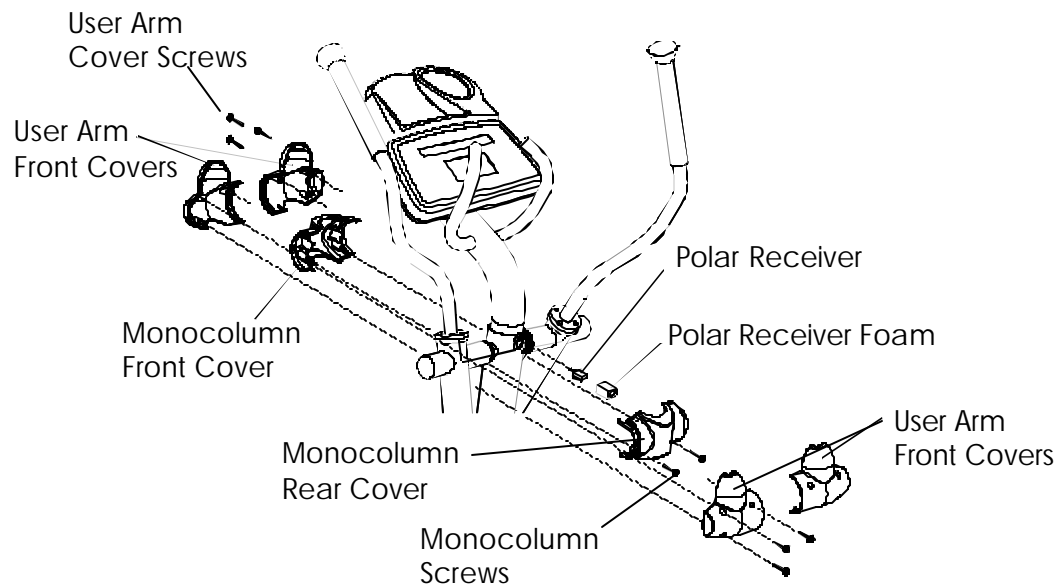
Tools required: Phillips screwdriver

1. **MODELS 8500 / 9100:** Remove four(4) mounting bolts from the two halves of the MONOCOLUMN COVER and separate.
2. **MODEL 9500:** Remove four(4) mounting bolts from each USER ARM REAR COVER(2). Then remove four(4) mounting bolts from the MONOCOLUMN COVERS and separate the two halves.
3. Locate the POLAR RECEIVER in the monocolumn and disconnect it from its jack.
4. Install a new POLAR RECEIVER in reverse order.

Monocolumn
Front Cover



Models 8500 / 9100



Model 9500

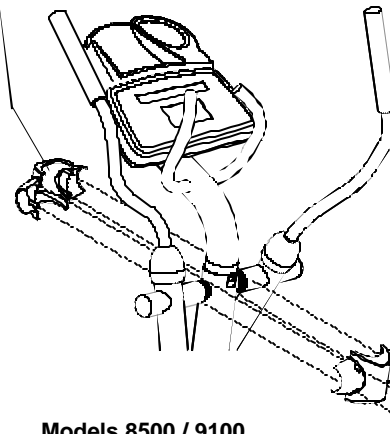
Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

How To... Replace Monocolumn Cover

Tools required: Phillips screwdriver

1. **MODELS 8500 / 9100:** Remove four(4) mounting bolts from the two halves of the MONOCOLUMN COVER and separate.
2. **MODEL 9500:** Remove four(4) mounting bolts from each USER ARM REAR COVER(2). Then remove four(4) mounting bolts from the MONOCOLUMN COVERS and separate the two halves.
3. Install new monocolumn covers in reverse order.

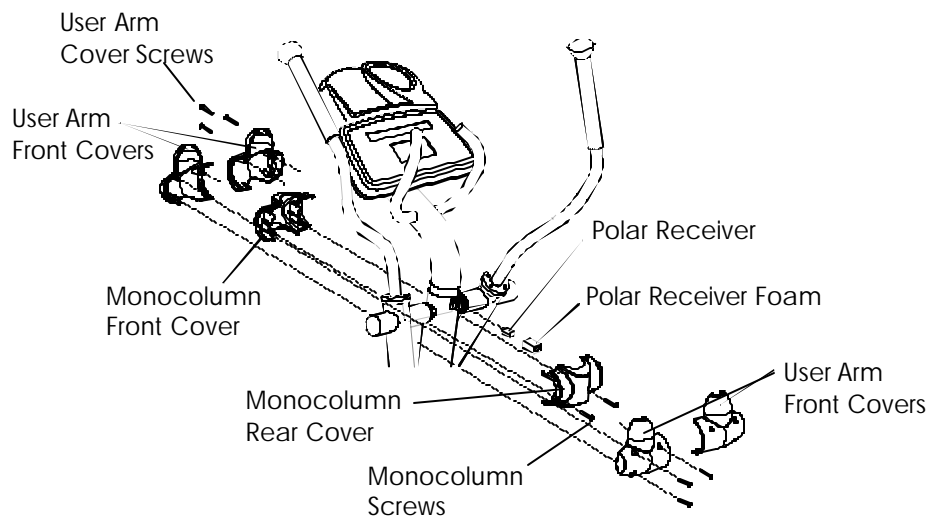
Monocolumn
Front Cover



Monocolumn
Back Cover

Monocolumn
Screws

Models 8500 / 9100



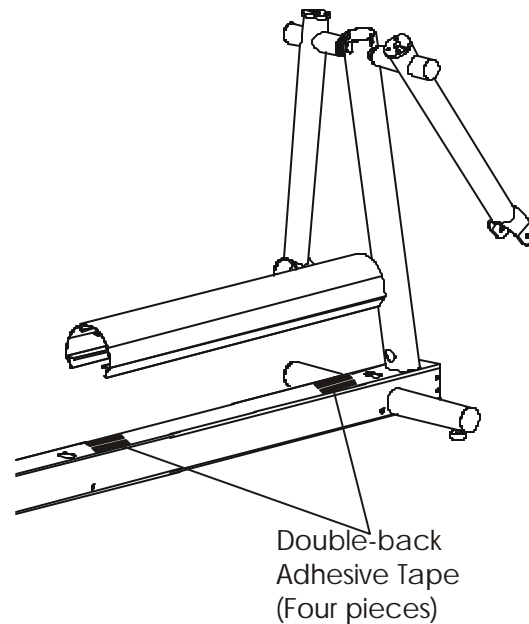
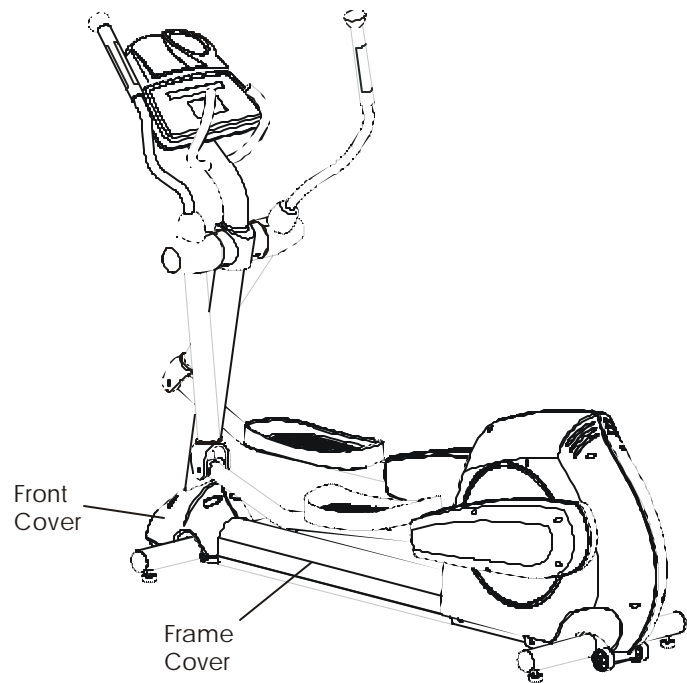
Model 9500

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

How To... Replace The Frame Cover

Tools required: Phillips screwdriver, Standard screwdriver, Allen wrench set, 3/8" Socket set, and Wrenches

1. Remove the REAR COVERS. See How To...Remove Rear Covers.
2. Remove the FRONT COVER.
3. Remove the FRAME COVER which is adhered to the frame with double-back tape.
4. Install four(4) pieces of tape to the underside of the cover, then install the FRAME COVER.

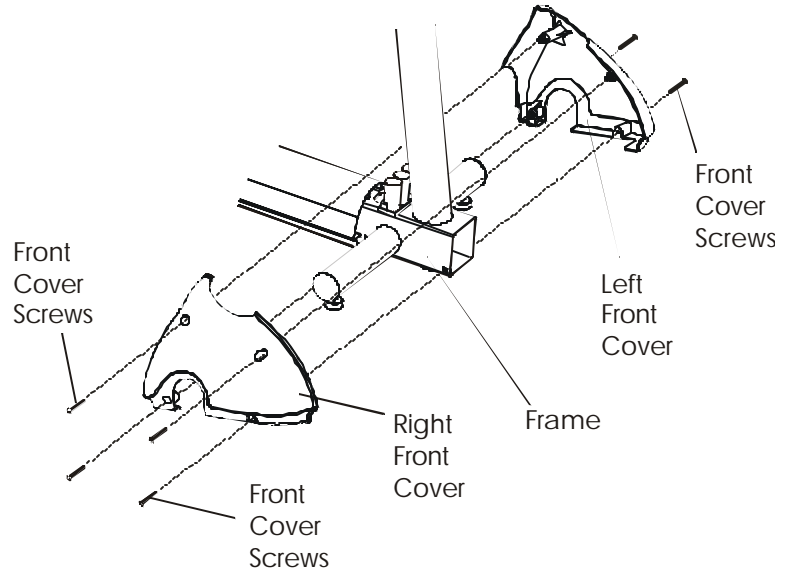


Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

How To... Replace The Front Cover

Tools required: Phillips magnetic screwdriver #2

1. Remove the FRONT COVER screws(6) and separate the front cover halves.
2. Install new front cover in reverse order.

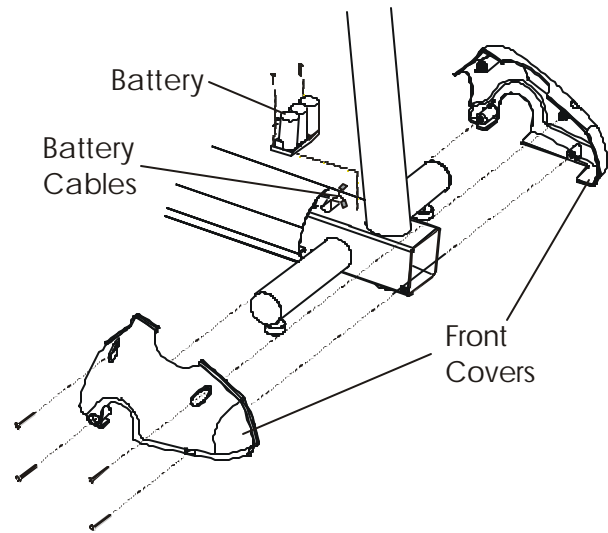


Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

How To... Replace The Battery

Tools required: Phillips magnetic screwdriver #2

1. Remove the FRONT COVER screws(6) and separate the front cover halves.
2. Disconnect the BATTERY CABLES.
3. Remove the battery mounting screws(2) and lift out the BATTERY.
4. Install new battery in reverse order.

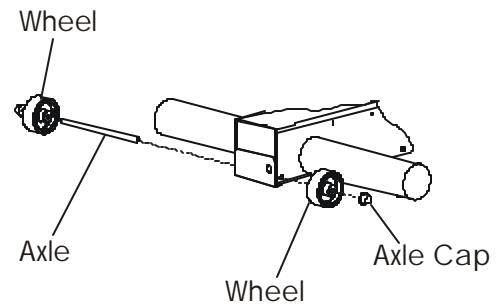
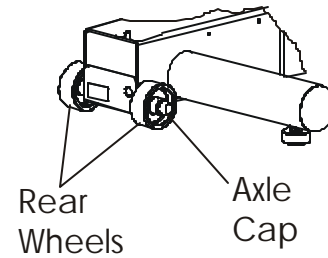


Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

How To... Replace The Rear Wheels and Axle

Tools required: Slotted screwdriver and Pliers

1. Remove the AXLE CAP from the WHEEL AXLE.
2. Remove the WHEELS and AXLE.
3. Install new wheels, axle, and axle cap in the reverse direction.

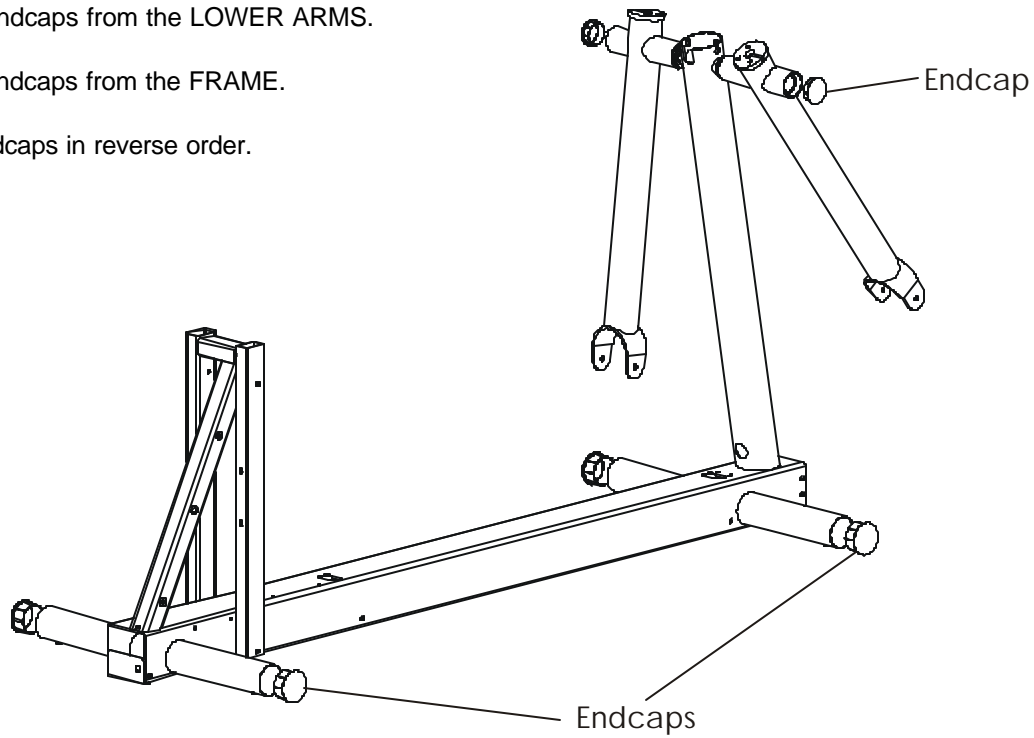


Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

How To... Replace The Endcaps

Tools required: Slotted screwdriver

1. Remove the endcaps from the LOWER ARMS.
2. Remove the endcaps from the FRAME.
3. Install new endcaps in reverse order.

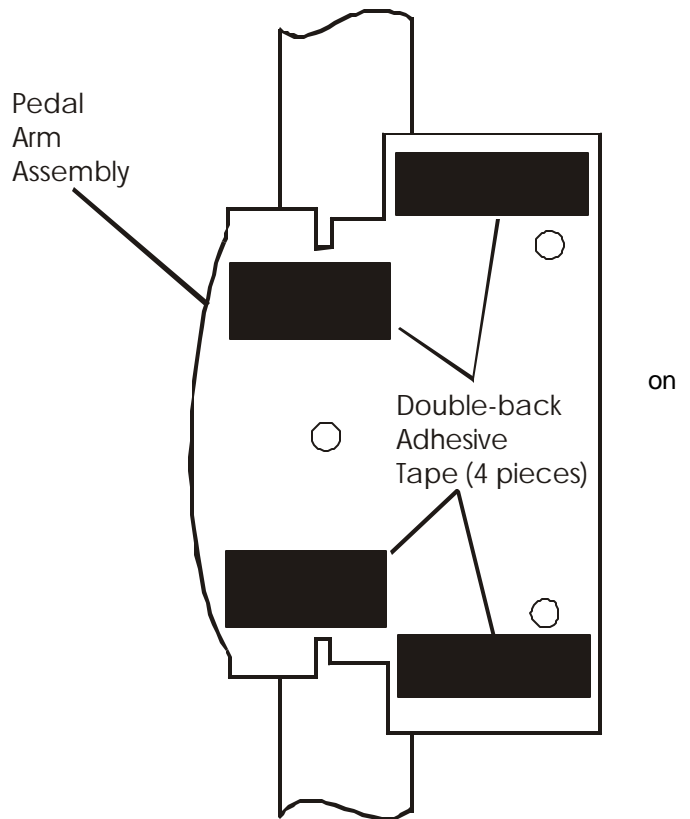


Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

How To... Replace Pedal

Tools required: Clean cloth, water, and isopropyl alcohol

1. Remove the pedals from the pedal arm assemblies.
2. Remove old tape.
3. Using a clean cloth, carefully clean the surface areas using a mixture of 50% water and 50% isopropyl alcohol. Make sure all adhesive is removed from the pedal and pedal arm assembly and make sure that surface areas are perfectly dried.
4. Apply four(4) pieces of double-back adhesive tape the pedal arm assembly as shown.
5. Reinstall the pedal and apply 30-40 psi clamp pressure for approximately 60 seconds or longer.



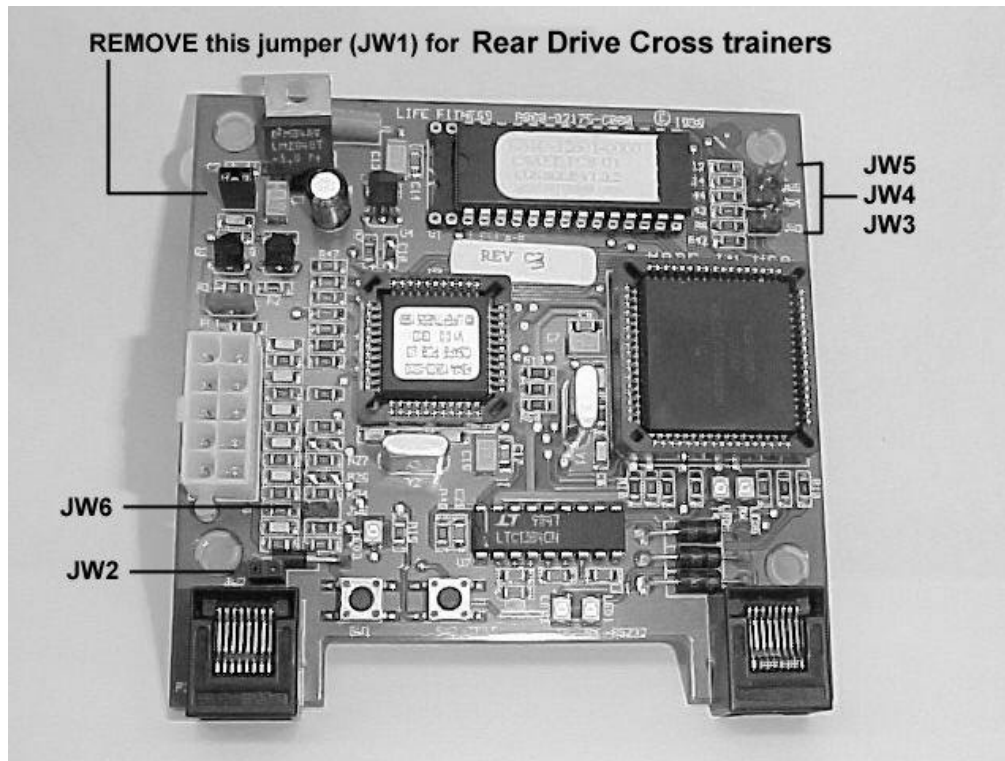
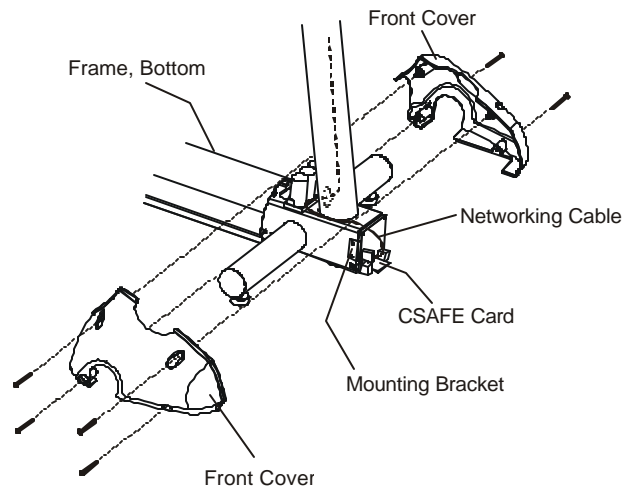
Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

How To... Set Jumpers on CSAFE Card

Tools required: Phillips screwdriver

1. Remove six(6) screws from the FRONT COVER and separate the front cover halves.
2. Set jumpers according to chart below.
3. Reinstall FRONT COVERS.

JUMPER SETTINGS					
JW1	JW2	JW3	JW4	JW5	JW6
OUT	IN	OUT	OUT	OUT	IN



NOTES:

SECTION IV

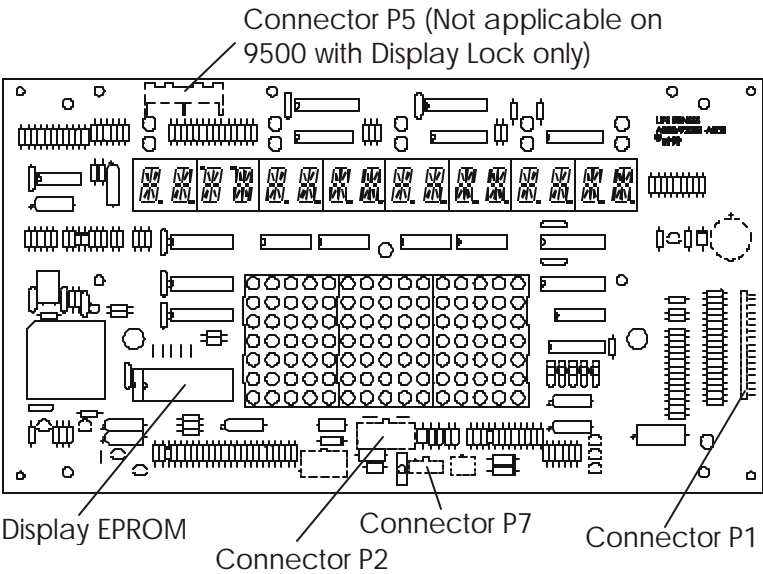
**ELECTRONICS OVERVIEW
AND
WIRING BLOCK DIAGRAMS**

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

ELECTRONICS OVERVIEW - DISPLAY CONSOLE BOARD

Functional Description:

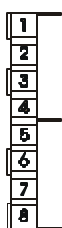

The Display Console Board is designed to work in conjunction with the Alternator Control Board. It reads the keypad input for changes or updates by the user, and refreshes the status LEDs, data display, and profile display matrix.



Connector and Pin Functions

Connector	Location	Pin	Functional Description
P1 is a 17 pin, ribbon connector that connects to the Overlay Board		1	Ground
		2	Strobe
		3	Strobe
		4	Return
		5	Strobe
		6	Return
		7	Strobe
		8	Return
		9	Strobe
		10	Return
		11	Ground
		12	Start
		13	Strobe
		14	Return
		15	Strobe
		16	Return
		17	Ground
P2 is a 10 pin connects to the Alternator Control Board		1	VSYS – POWER CONTROL (7-8VDC)
		2	RPM (5VDC)
		3	GROUND
		4	LOAD
		5	VBAT – (6 VDC)
		6	NOT USED
		7	FLDCMD
		8	START
		9	VBAT – (6VDC)
		10	VBAT – (6VDC)

ELECTRONICS OVERVIEW - DISPLAY CONSOLE BOARD – Continued

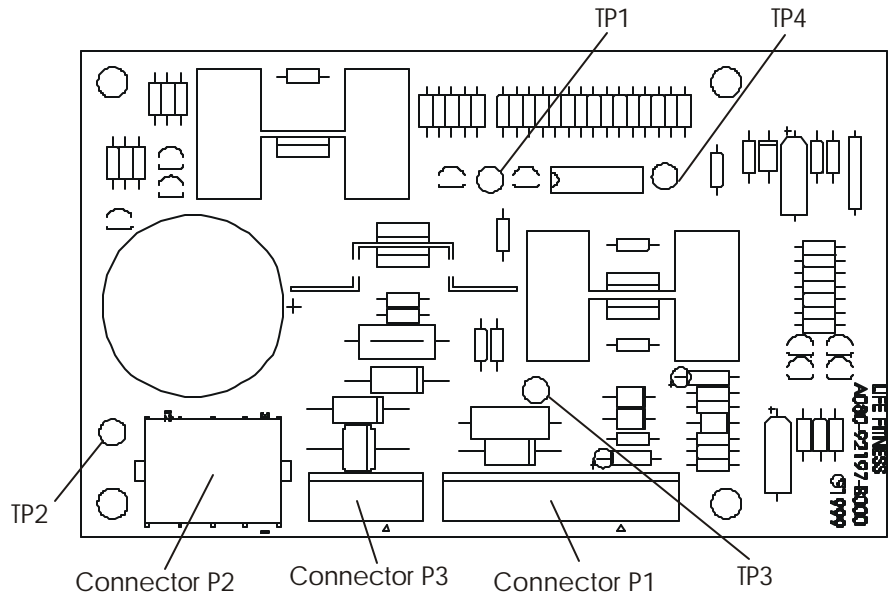
Connector	Location	Pin	Functional Description
<p>P5 is an 8 pin connector that connects the Life Pulse Board to the Console Board</p> <p><i>Note: Not applicable on CT9500 with Display Lock feature.</i></p>		1	HR-ENABLE (3.8 VDC)
		2	KEY
		3	VSYS (7-8 VDC)
		4	VSYS (7-8 VDC)
		5	GROUND
		6	GROUND
		7	HR-D0 (4.7 VDC)
		8	HR-DI (4.7 VDC)
<p>P7 is a 3 pin connector that comes from the Polar connector</p>		1	+VCC (5VDC)
		2	SIGNAL
		3	GROUND

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

ELECTRONICS OVERVIEW - POWER CONTROL BOARD

Functional Description:

The Power Control Board is designed to regulate the alternator voltage by modulating the field current. It regulates the pass current (RPM signal) from the Alternator to the Console, and the pass current from the alternator to the load resistor while providing supply voltage for the console.



Connector and Pin Functions

Connector	Location	Pin	Functional Description
P1 is a Molex 11 pin connector that connects to the Console		1	START
		2	GND
		3	KEY
		4	VSYS
		6	LOADCMD
		7	RPM
		8	START
		9	VBAT (6VDC)
		10	GND
		11	GND
P2 is a 12 pin connector that connects to the Alternator and Power Resistor		1	GND
		2	GND
		3	GND
		4	RPM
		5	GND
		6	FIELD
		7	LOAD
		8	LOAD
		9	LOAD
		10	VALT (10VDC)
		11	VALT (10VDC)
		12	LOAD
P3 is 4 pin connector (not used)		1	VSYS (7-8VDC)
		2	Keyed
		3	VSYS (7-8VDC)
		4	GND
		5	GND

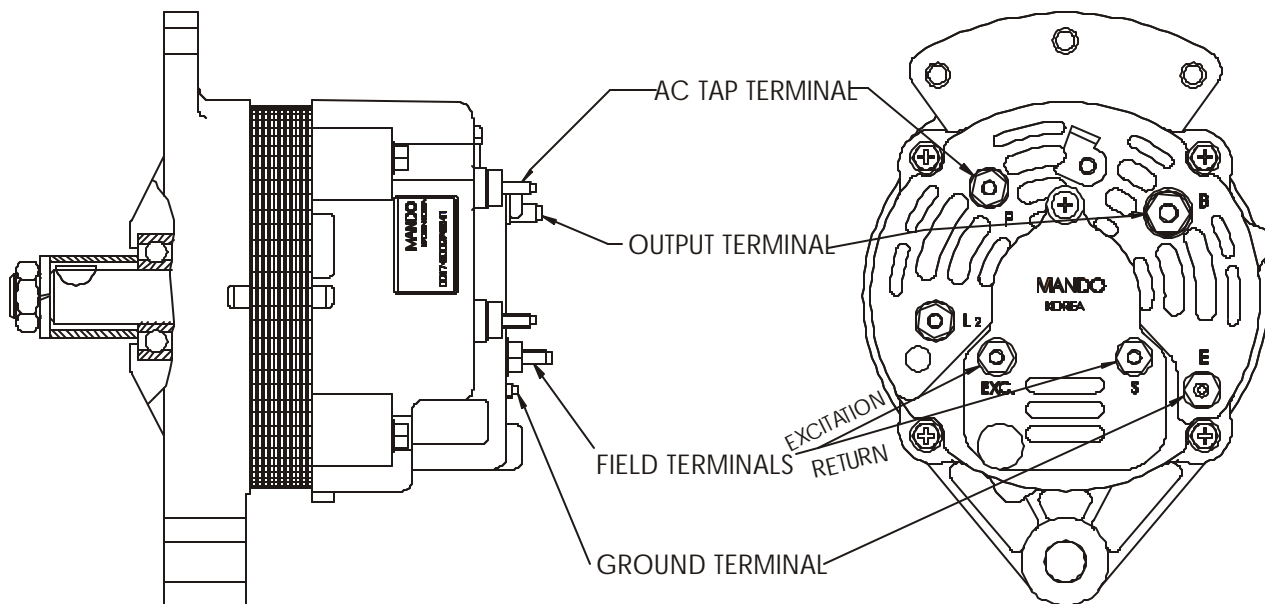
Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

ELECTRONICS OVERVIEW – ALTERNATOR

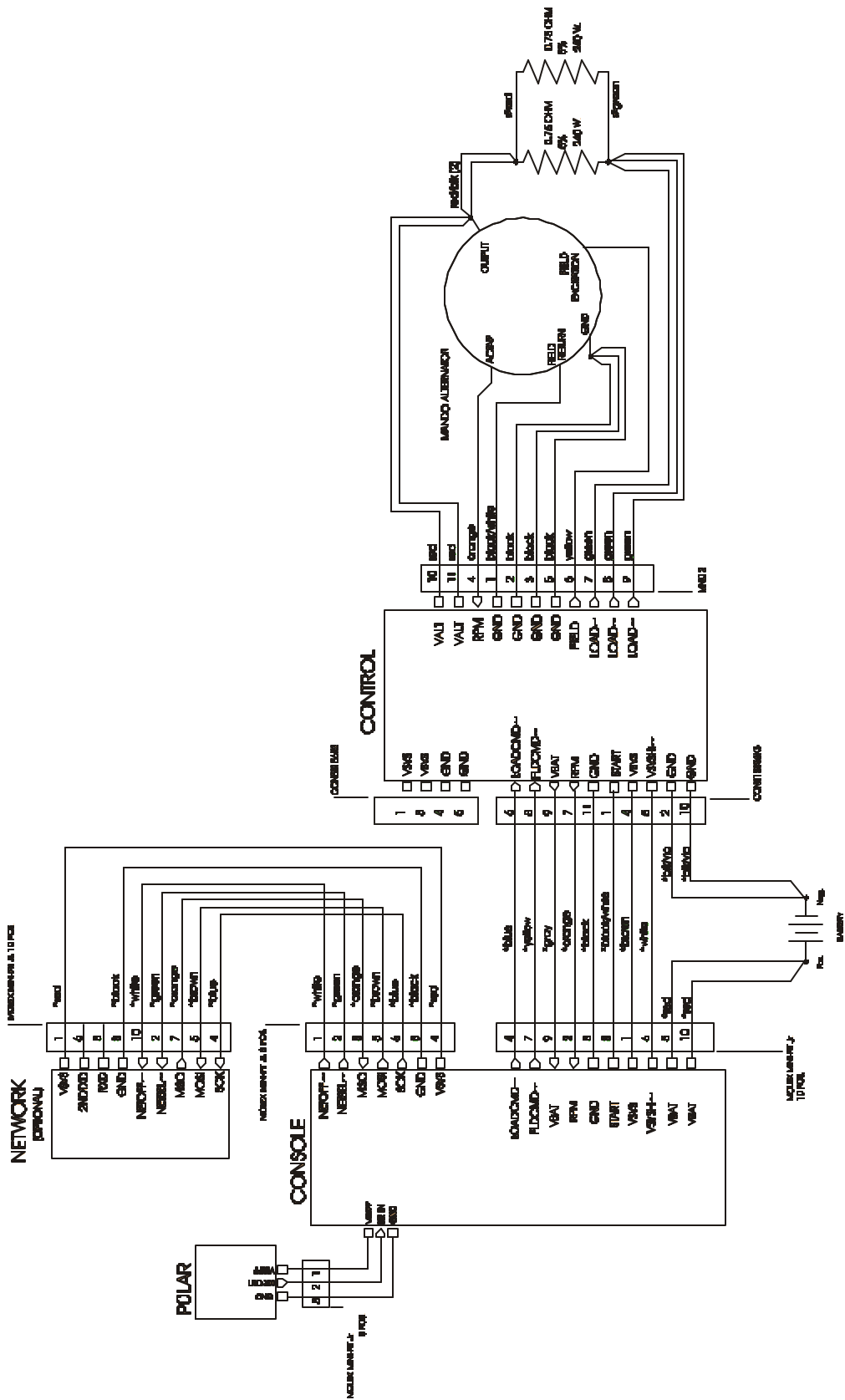
Functional Description:

The 12 volt, 35 amp Alternator is designed to provide electrical power to the product, supply load resistance while providing electrical power, and provide the RPM signal from the AC TAP to the Alternator Control Board.

Connector Locations:



Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers
WIRING BLOCK DIAGRAM FOR LC9500HR

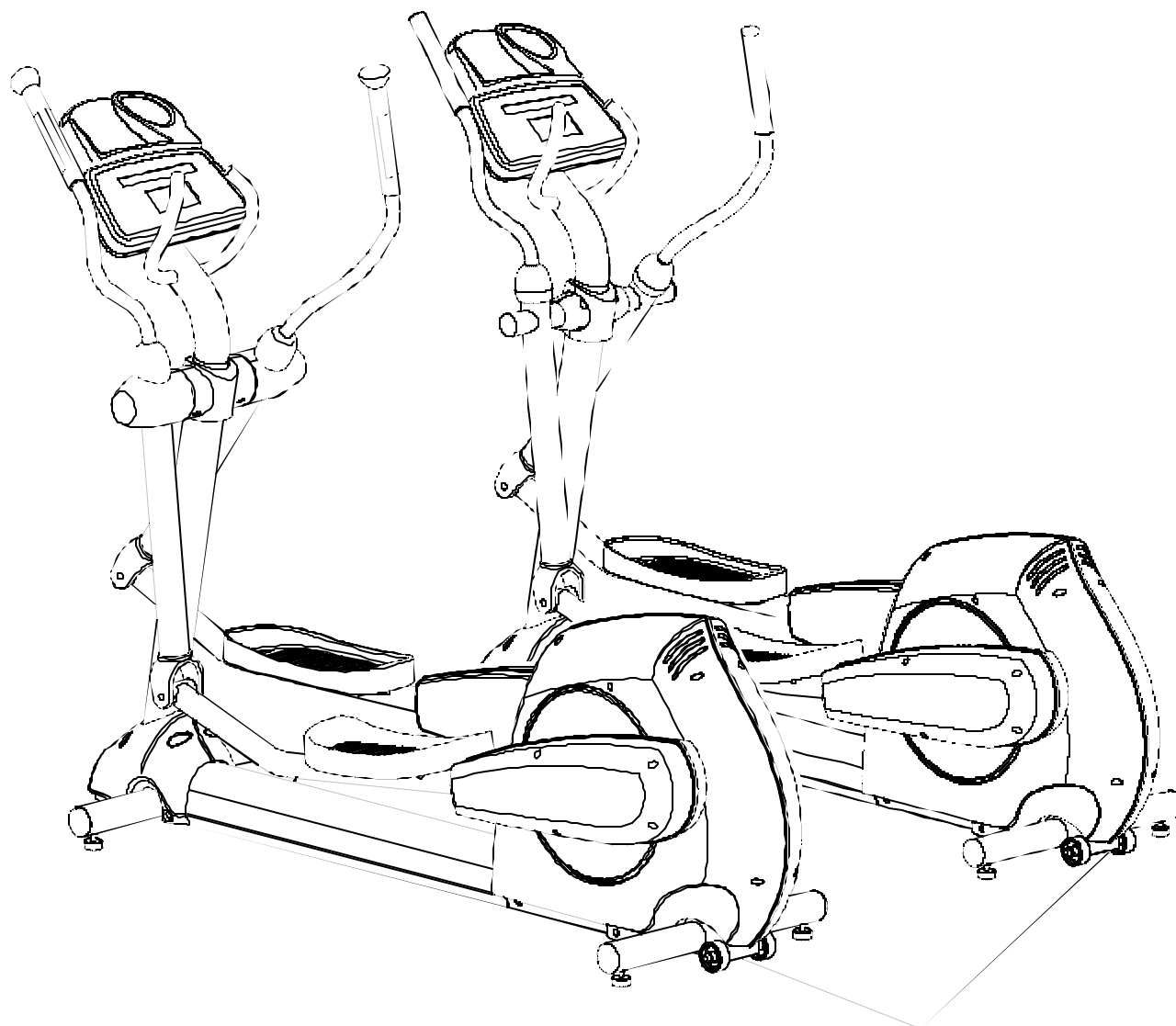


NOTES:

SECTION V

PARTS IDENTIFICATION

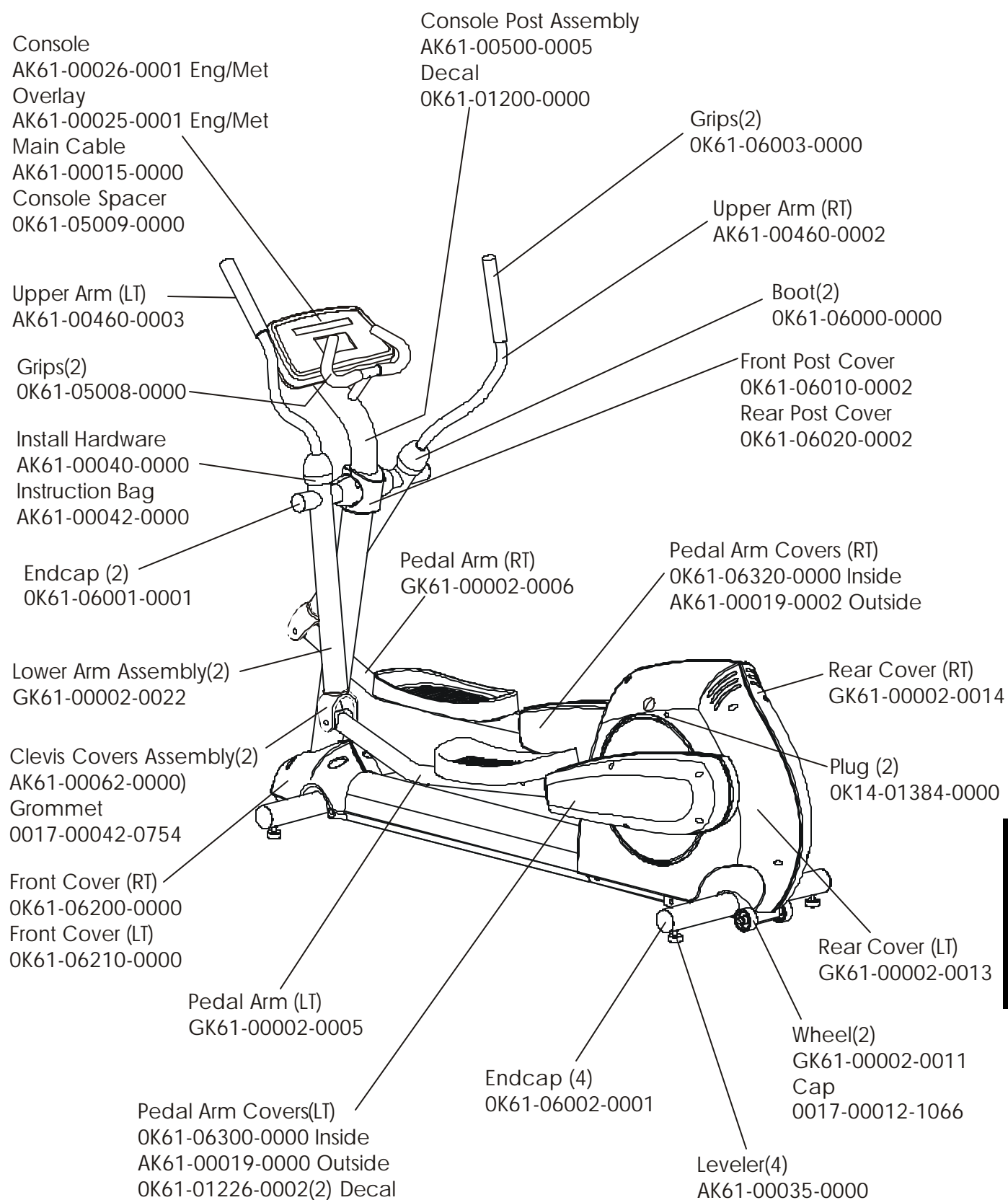
Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers
MODEL IDENTIFICATION and SERIAL NUMBER LOCATION



Model / Serial number

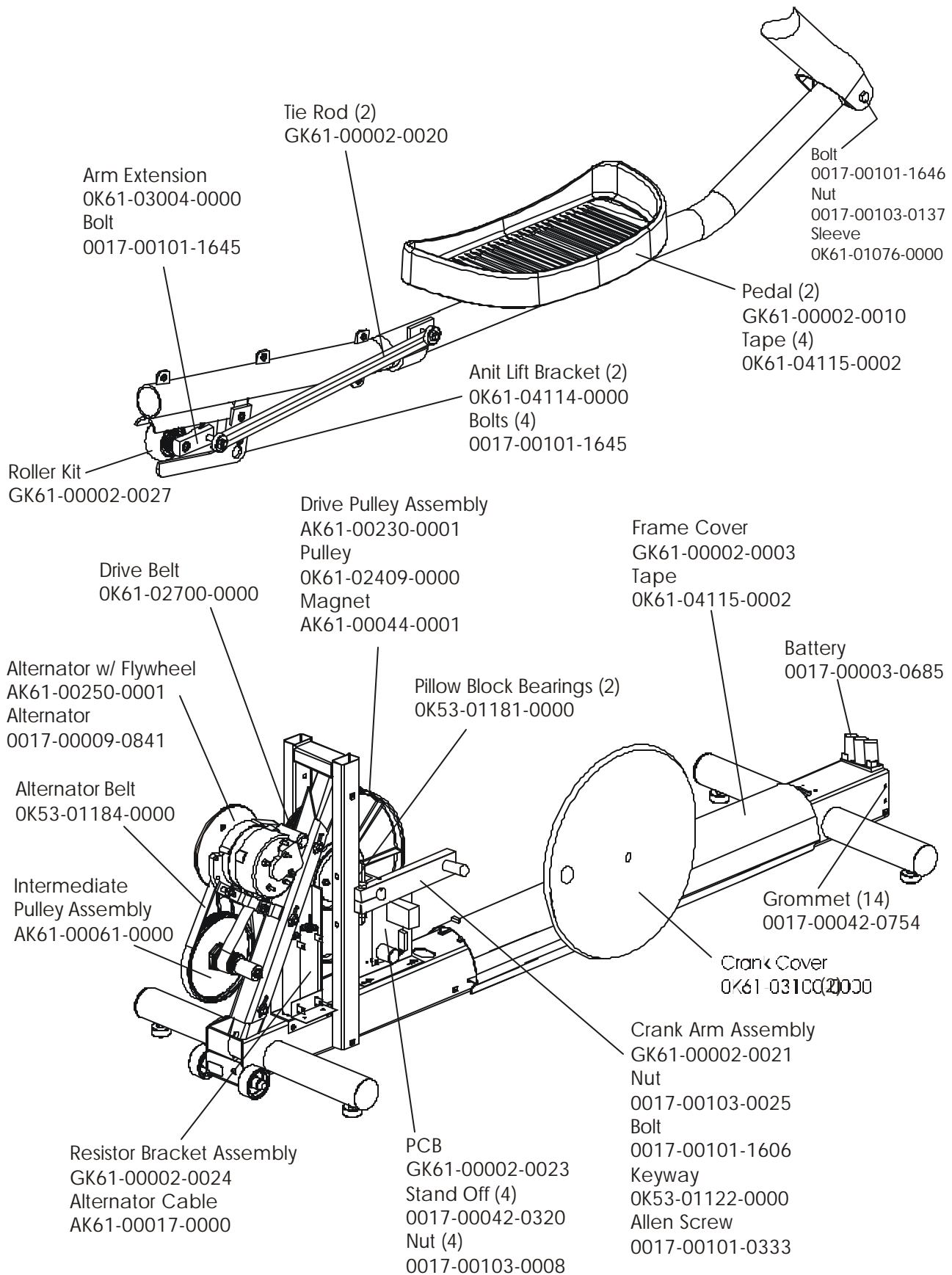
Life Fitness Model 8500 Cross-Trainer
MODEL CT85-0100-01

SN 100000-Up



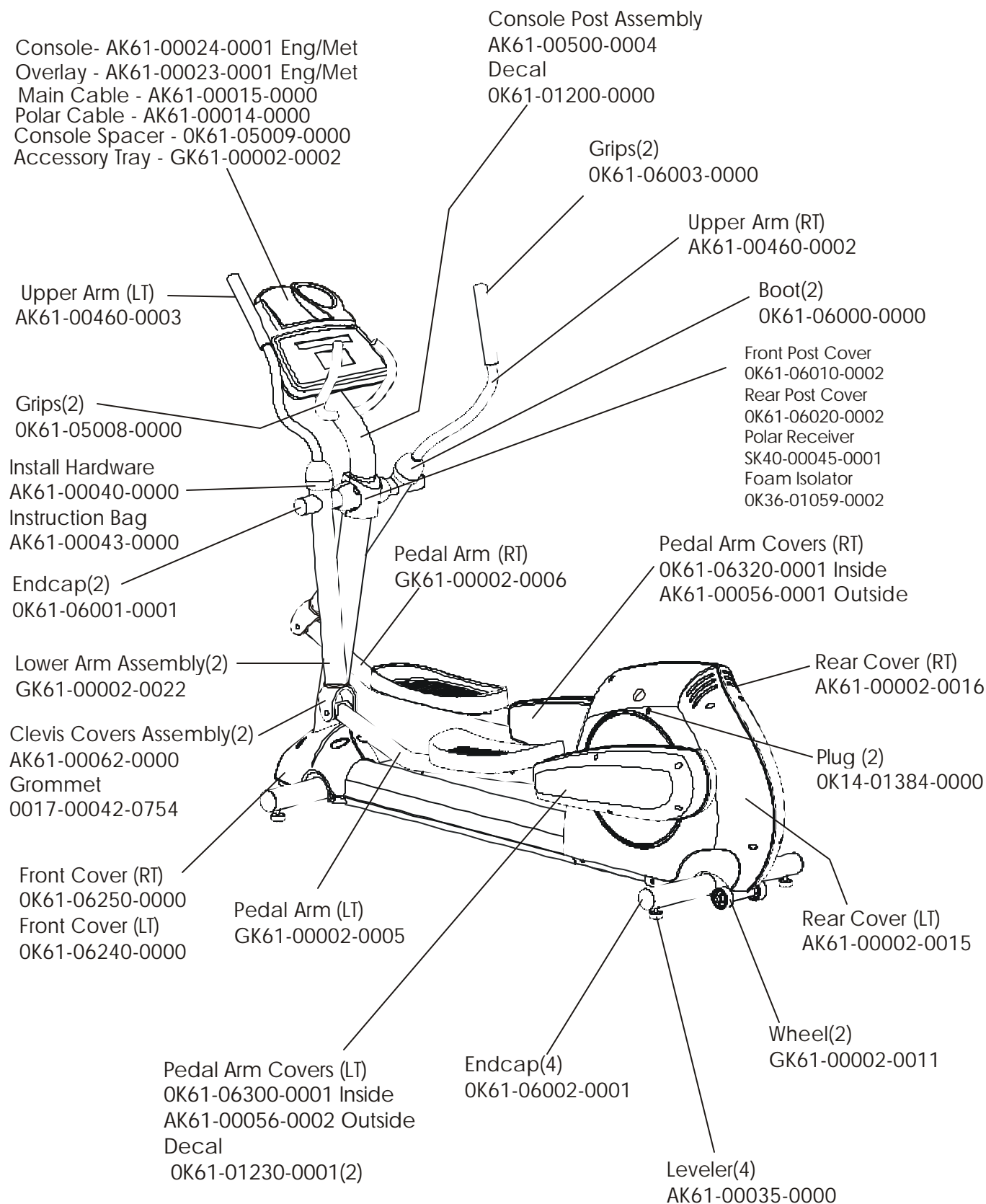
Life Fitness Model 8500 Cross-Trainer
MODEL CT85-0100-01

SN 100000-Up



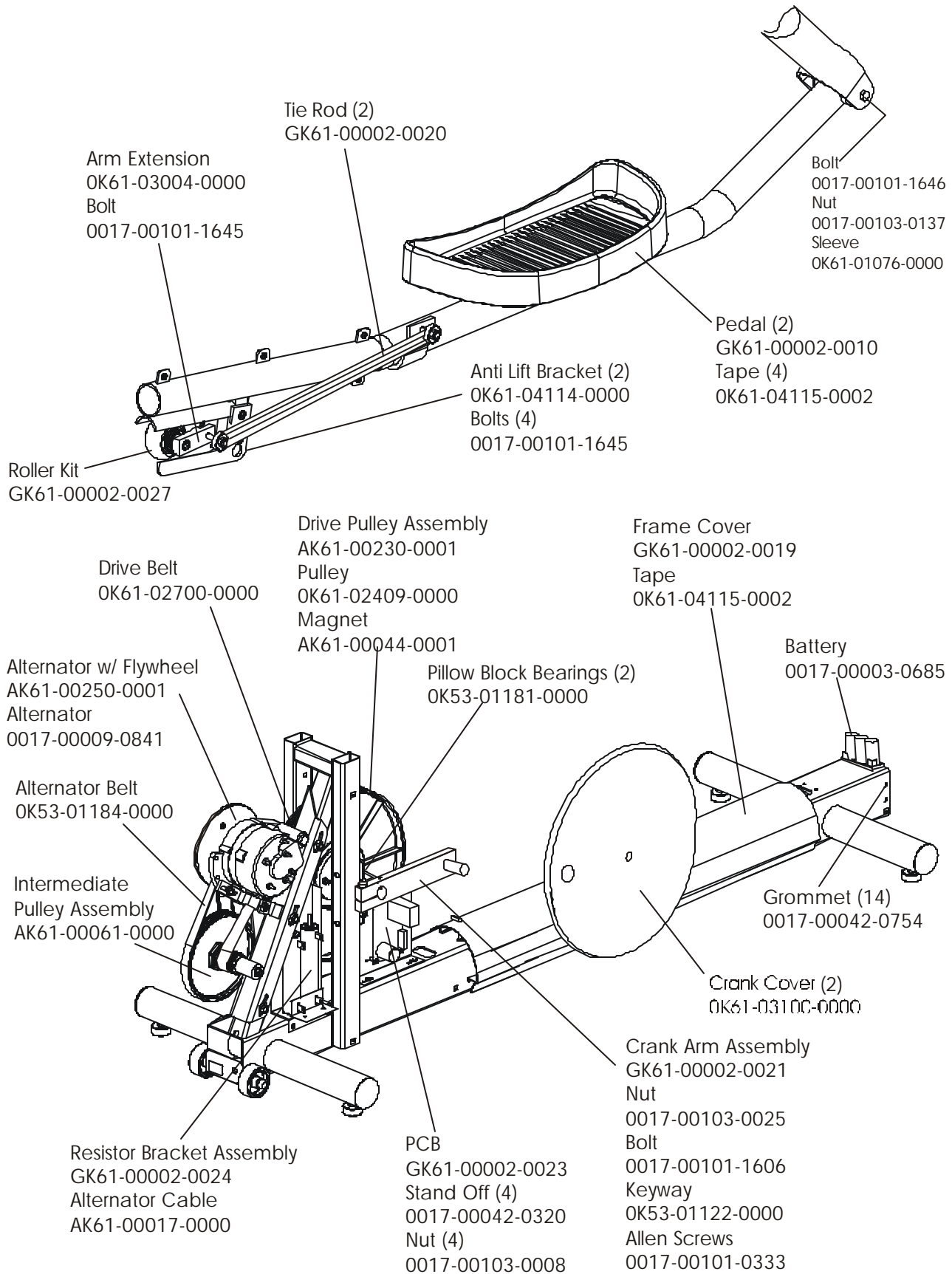
Life Fitness Model 9100 Cross-Trainer
MODEL CT91-0100-01

SN 100000-Up



Life Fitness Model 9100 Cross-Trainer
MODEL CT91-0100-01

SN 100000-Up



Life Fitness Model 9500 Cross-Trainers
MODEL CT95-0100-15

SN 100000-Up

Polar Cable - AK61-00014-0000
 Main Cable - AK61-00015-0000
 Overlay - AK61-00054-0001 Eng/Met
 Console- AK61-00053-0001 Eng/Met
 HR Cable - AK61-00052-0002
 Accessory Tray - GK61-00002-0002

Console Post Assembly
 AK61-00500-0004
 Decal
 OK61-01200-0000

Upper Arm (RT)
 AK61-00048-00012
 Front Post Cover
 OK61-06350-0002
 Rear Post Cover
 OK61-06351-0002
 Polar Receiver
 SK40-00045-0001
 Foam Insulator
 OK36-01059-0002

Upper Arm (LT)
 AK61-00048-00002

Grips(2)
 OK61-05008-0000

Instruction Bag
 AK61-00049-0000
 Install Hardware
 AK61-00050-0000

Front Boot Cover
 OK61-06340-0002
 Rear Boot Cover
 OK61-06341-0002

Lower Arm Assembly(2)
 GK61-00002-0019

Clevis Covers Assembly(2)
 AK61-00062-0000
 Grommet
 0017-00042-0754

Front Cover (RT)
 OK61-06250-0000
 Front Cover (LT)
 OK61-06240-0000

Pedal Arm (RT)
 GK61-00002-0006

Pedal Arm (LT)
 GK61-00002-0005

Pedal Arm Covers (LT)
 OK61-06300-0001 Inside
 AK61-00018-0001 Outside
 Decal
 OK61-01222-0001(2)

Pedal Arm Covers (RT)
 OK61-06320-0001 Inside
 AK61-00018-0003 Outside

Plug (2)
 OK14-01384-0000

Rear Cover (RT)
 AK61-00002-0016

Rear Cover (LT)
 AK61-00002-0015

Wheel(2)
 GK61-00002-0011

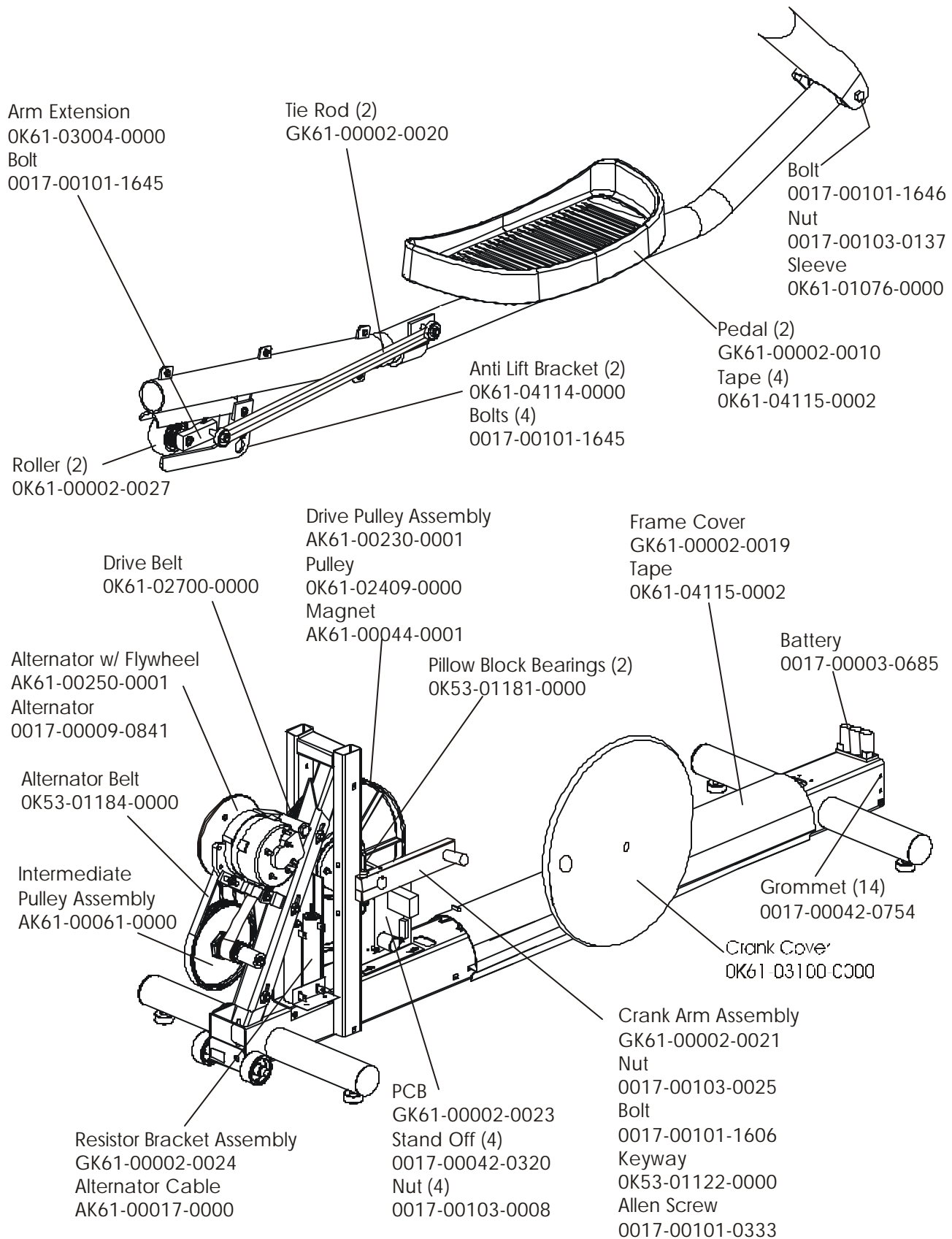
Endcap (4)
 OK61-06002-0001

Leveler(4)
 AK61-00035-0000

Section V

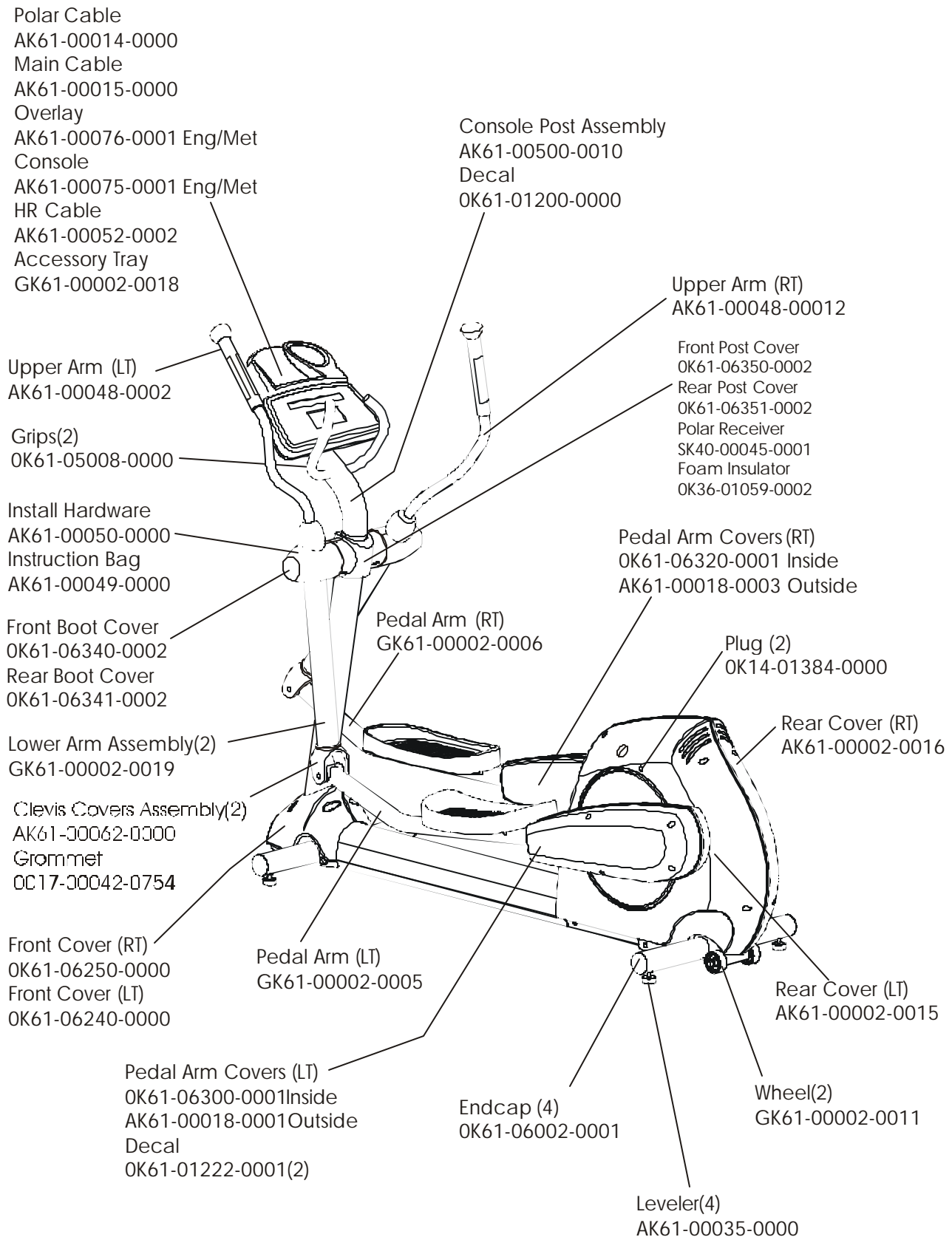
Life Fitness Model 9500 Cross-Trainers
MODEL CT95-0100-15

SN 100000-Up



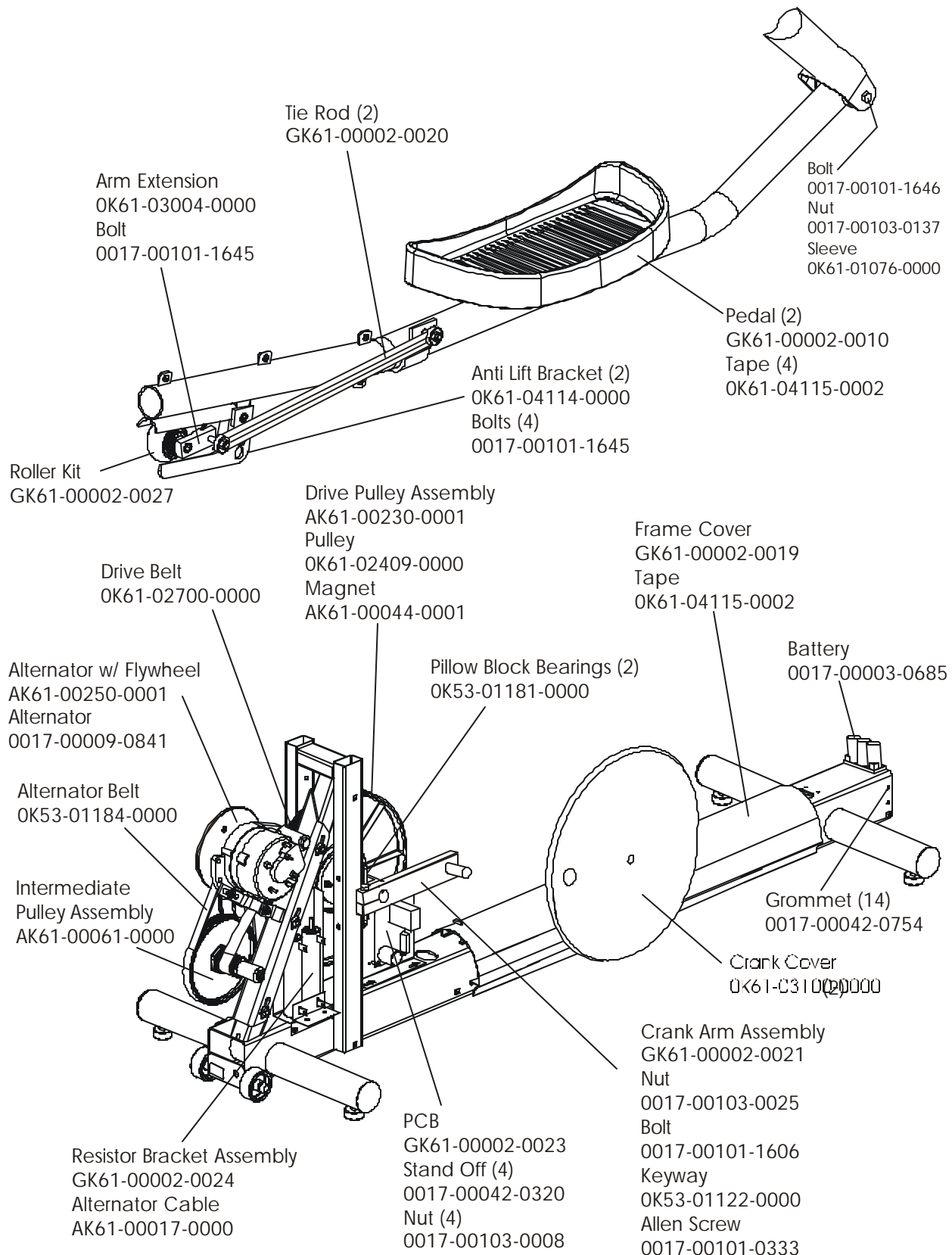
Life Fitness Model 9500 Cross-Trainers
MODEL CT95-0100-17

SN 103198-Up



Life Fitness Model 9500 Cross-Trainers
MODEL CT95-0100-17

SN 103198-Up



NOTES:

SECTION VI

MISCELLANEOUS INFORMATION

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers
PREVENTIVE MAINTENANCE TIPS

Preventive Maintenance Schedule

	DAILY	MONTHLY	BI-ANNUALLY
Housing			
Inside			Clean
Outside	Clean		
Power Control			
Heatsink			Clean
Connectors			Inspect
Board			Inspect
Console Assembly			
Overlay	Clean		
Mounting Bolts		Inspect	
Connectors			Inspect
Alternator			
Belt Tension			Inspect
Brushes			Inspect
Flywheel			Clean/Inspect
Mechanical			
Main Drive Belt		Inspect	
Oil Light Bearings			Inspect and lube with non-detergent oil
Pedals		Clean	
Drive Pulley			Clean/Inspect

IMPORTANT SAFETY INSTRUCTIONS!

- ⇒ *DO NOT* locate the Cross-Trainer outdoors, near swimming pools, or in areas of high humidity.
- ⇒ *DO NOT* operate your Cross-Trainer if it has been dropped, damaged, or even partially immersed in water. Contact Life Fitness Customer Support Services at the number in the Operation Manual.
- ⇒ *DO NOT* locate the Cross-Trainer any closer than 30 inches (76 cm) to a television set.
- ⇒ *DO NOT* locate additional Cross-Trainers any closer than a minimum of 42 inches (107 cm) from center to center to avoid interference (cross talk) between Heart Rate monitors.
- ⇒ *DO* keep the area around your Cross-Trainer clear of any obstructions, including walls and furniture.
- ⇒ *DO* verify the contents of the delivery carton against the accompanying Parts Listing prior to setting the cartons and shipping material aside. If any parts are missing, contact Life Fitness Customer Support Services at the number listed in the Operation Manual. Save the shipping cartons in case of return.
- ⇒ *DO* read the entire Operation Manual prior to attempting to operate this machine as this is essential for proper use.

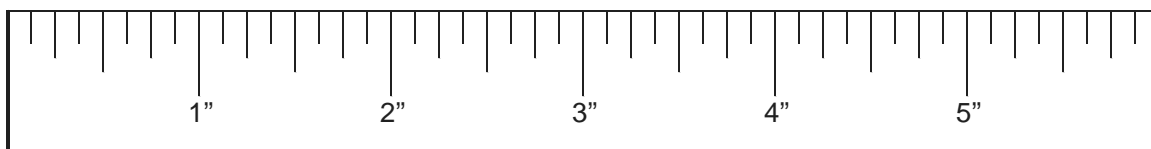
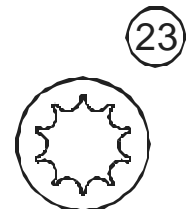
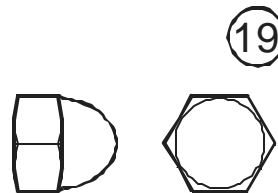
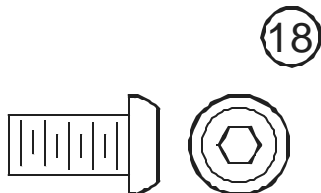
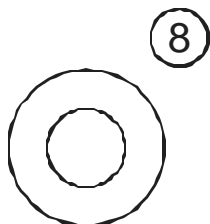
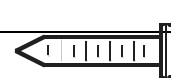
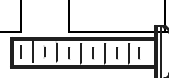
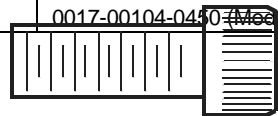
Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

INSTALLATION INSTRUCTIONS

TOOLS REQUIRED FOR ASSEMBLY... **Magnetic #2 Bit Phillips Screwdriver, 5/16" & 3/16" Hex Key Wrenches, 1/2" Open End Wrench**

Parts List

1	Hex Socket Head Cap Screw 3/8-16 x 1" 0017-00101-1645	Qty: 8
3	Phillips Pan Head Screw (Model 9100) Qty: 14 #8-18 x 3/4" (Model 9500HR) Qty: 18 0017-00101-1242	
5	Front Monocolumn Cover OK61-06020-0002 (Model 9100) OK61-06350-0002 (Model 9500HR)	Qty: 1
7	Console Support Assembly AK61-00500-0004	Qty: 1
9	Left Front Cover OK61-06240-0000	Qty: 1
11	Left User Arm Assembly AK61-00460-0003 (Model 9100) AK61-00048-0002 (Model 9500HR)	Qty: 1
13	Front Rocker Cover OK61-06340-0002 (Model 9500HR Only)	Qty: 2
15	Foam Isolator (Polar® Receiver) OK36-01059-0002	Qty: 1
17	Accessory Tray AK61-00045-0002	Qty: 1
19	Acorn Nut 5/16-18 0017-00103-0287	Qty: 4
21	Front Clevis Cover OK61-06352-0002	Qty: 2
23	Internal Lock Washer 0017-00104-0450 (Model 9500HR Only)	Qty: 6
2	Phillips Pan Head Screw #8-16 x 3/4" 0017-00101-1148	Qty: 4
4	Console Assembly AK61-00024-0001 (Model 9100) AK61-00053-0001 (Model 9500HR)	Qty: 1
6	Back Monocolumn Cover OK61-06010-0002 (Model 9100) OK61-06351-0002 (Model 9500HR)	Qty: 1
8	Flat Washer 0017-00104-0192	Qty: 2
10	Right Front Cover OK61-06250-0000	Qty: 1
12	Right User Arm Assembly AK61-00460-0002 (Model 9100) AK61-00048-0001 (Model 9500HR)	Qty: 1
14	Back Rocker Cover OK61-06341-0002 (Model 9500HR Only)	Qty: 2
16	Polar® Receiver AK40-00045-0001	Qty: 1
18	Button Head Cap Screw 5/16-18 x 5/8" 0017-00101-1647	Qty: 4
20	Console Spacer OK61-05009-0000	Qty: 1
22	Back Clevis Cover OK61-06353-0002	Qty: 2

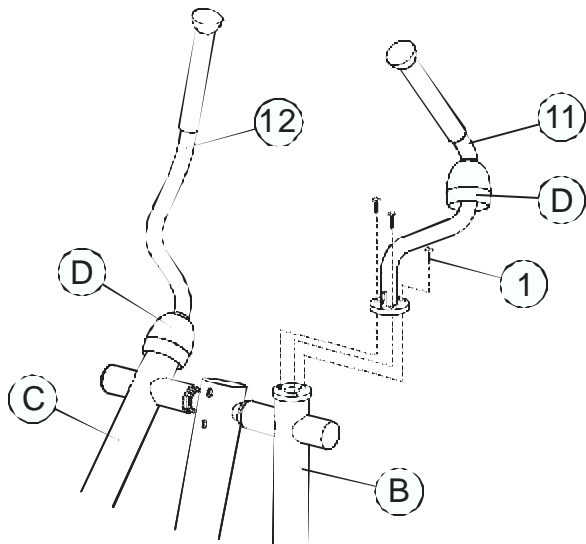
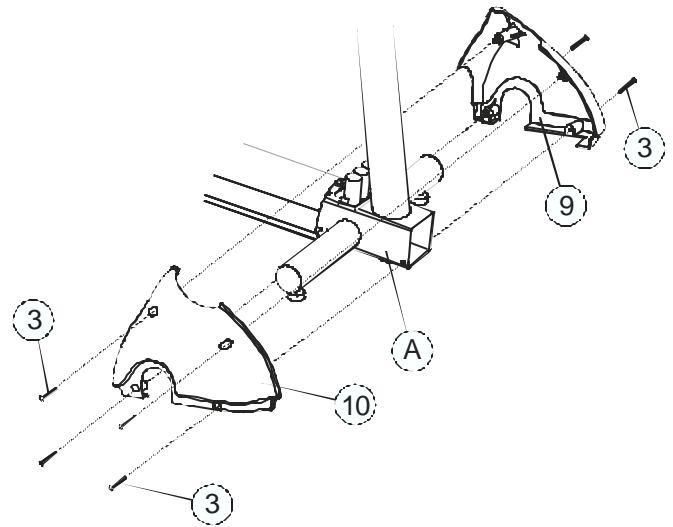


Step 1

Before proceeding, familiarize yourself with the parts of the Cross-Trainer and make sure that you have received all the items described in the Parts List.

Step 2

Locate the left and right FRONT COVER (#9, #10). Using two PHILLIPS PAN HEAD SCREWS (#3), mount the USER LEFT FRONT COVER (#9) to the FRAME (A). Attach the USER RIGHT FRONT COVER (#10) to the FRAME in the same manner using two PHILLIPS PAN HEAD SCREWS (#3). Secure the tops of the FRONT COVERS together using two PHILLIPS PAN HEAD SCREWS (#3).



Step 3

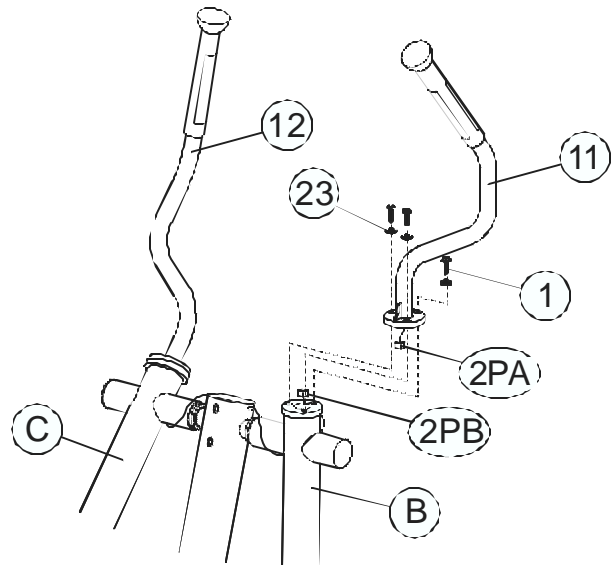
(Model 9100 Only)

Locate the LEFT USER ARM (#11). Secure the LEFT USER ARM to the LEFT ROCKER ARM (B) using three HEX SOCKET HEAD CAP SCREWS (#1). Repeat the procedure for the RIGHT USER ARM (#12) and RIGHT ROCKER ARM (C). Tighten all screws securely. Slide the BOOT COVERS (D) located on the user arms down over the mounting plates.

(Model 9500HR Only)

Locate the LEFT USER ARM (#11). Snap the 2-PIN CONNECTOR (2PA) located at the bottom of the LEFT USER ARM into the 2-PIN CONNECTOR (2PB) positioned at the top of the LEFT ROCKER ARM (B). Feed the connectors and excess cable up into the LEFT USER ARM. Secure the LEFT USER ARM to the LEFT ROCKER ARM using three HEX SOCKET HEAD CAP SCREWS (#1) and INTERNAL LOCK WASHERS (#23). Repeat the procedure for the RIGHT USER ARM (#12) and RIGHT ROCKER ARM (C). Tighten all screws securely.

CAUTION: BE CAREFUL NOT TO PINCH THE WIRE HARNESSES WHEN ASSEMBLING THE USER ARMS (#11 & #12) TO THE ROCKER ARMS (B & C) (Model 9500HR Only).



Model 9500HR Shown

Step 4

Detach and unwrap the WIRE HARNESS (E) (10P, 3P, (4P 9500HR Only)) located at the top of the MONOCOLUMN (F). Holding the CONSOLE SUPPORT ASSEMBLY (#7) with the handgrips facing upward, feed the WIRE HARNESS up through the neck and out the top access hole. Carefully lower the CONSOLE SUPPORT ASSEMBLY into the MONOCOLUMN.

CAUTION: BE CAREFUL NOT TO PINCH THE WIRE HARNESS (E) WHEN ASSEMBLING THE CONSOLE SUPPORT ASSEMBLY (#7) TO THE MONOCOLUMN (F).

Step 5

Using two HEX SOCKET HEAD CAP SCREWS (#1) and two FLAT WASHERS (#8), secure the CONSOLE SUPPORT ASSEMBLY (#7) to the MONOCOLUMN (F). Tighten the screws securely.

Step 6

Locate the ACCESSORY TRAY (#17). Feed the WIRE HARNESS (E) through the center access hole. Place the ACCESSORY TRAY on the CONSOLE SUPPORT ASSEMBLY (#7) as shown. Using four BUTTON HEAD CAP SCREWS (#18) and ACORN NUTS (#19), secure the ACCESSORY TRAY to the CONSOLE SUPPORT ASSEMBLY through the large mounting holes. Tighten the screws securely.

Step 7

Attach the 3-PIN (3P) and 10-PIN (10P) CONNECTORS to the corresponding jacks on the back of the CONSOLE ASSEMBLY (#4).

(Model 9500HR Only)

Attach the 4-PIN (4P) CONNECTOR to the corresponding jack on the back of the CONSOLE ASSEMBLY (#4).

Step 8

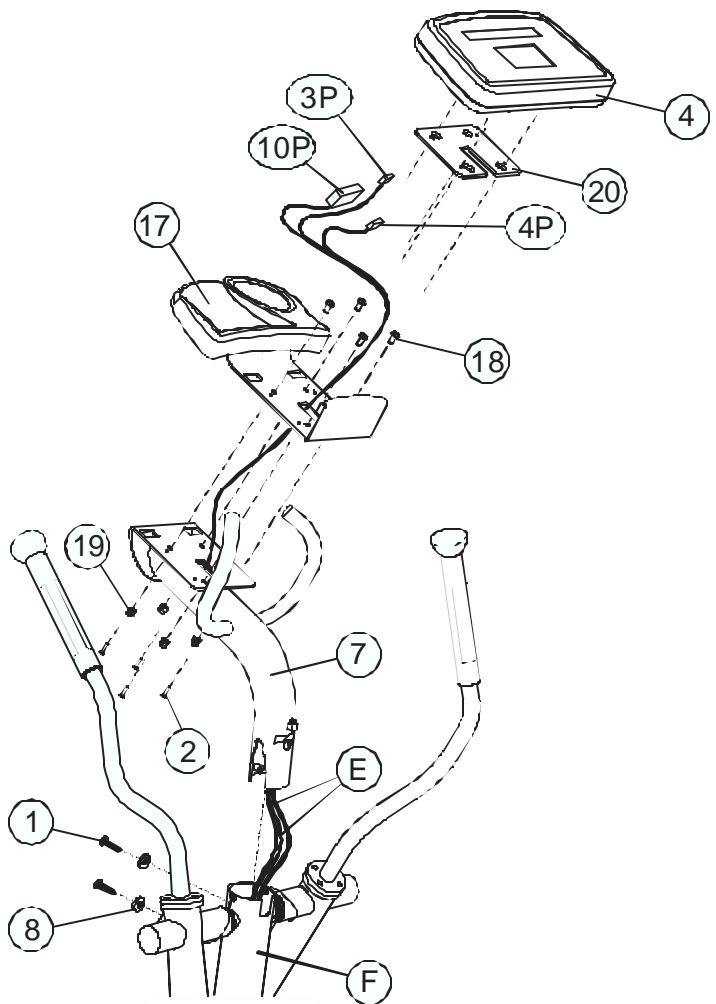
Place the CONSOLE ASSEMBLY SPACER (#20) onto the CONSOLE SUPPORT ASSEMBLY (#7). Align the mounting holes in the CONSOLE ASSEMBLY SPACER with those in the CONSOLE SUPPORT ASSEMBLY.

Step 9

Feed any excess WIRE HARNESS (E) down into the CONSOLE SUPPORT ASSEMBLY (#7). Secure the CONSOLE ASSEMBLY (#4) to the CONSOLE SUPPORT ASSEMBLY using four PHILLIPS PAN HEAD SCREWS (#2). Tighten the screws securely.

CAUTION: DO NOT OVER-TIGHTEN THE PHILLIPS HEAD PAN SCREWS (#2).

CAUTION: BE CAREFUL NOT TO PINCH THE WIRE HARNESS (E) WHEN ASSEMBLING THE CONSOLE ASSEMBLY (#4) TO THE CONSOLE SUPPORT ASSEMBLY (#7).



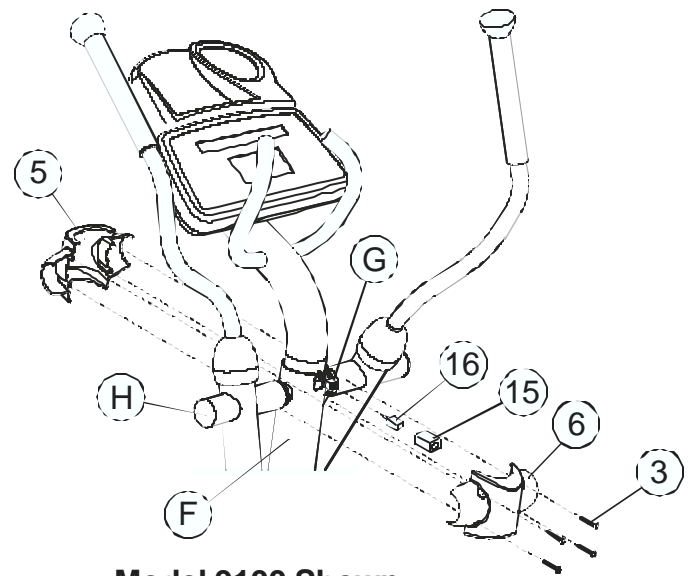
Step 10

Locate the POLAR® RECEIVER (#16). Slide the FOAM ISOLATOR (#15) over the POLAR RECEIVER. Remove the POLAR RECEIVER JACK (G) located at the front of the MONOCOLUMN (F) near the PIVOT SHAFT (H) from the tape and plug the POLAR RECEIVER into the POLAR RECEIVER JACK.

Step 11

Locate the front and back MONOCOLUMN COVERS (#5 & #6). With the wire positioned on top, carefully insert the POLAR RECEIVER (#16) between the vertical ribs located inside the BACK MONOCOLUMN COVER (#6).

Place the BACK MONOCOLUMN COVER (#6) over the PIVOT SHAFT (H) at the top of the MONOCOLUMN (F).



Model 9100 Shown

NOTE: THE POLAR RECEIVER WIRE MUST BE POSITIONED ON TOP WHEN INSERTED INTO THE REAR MONOCOLUMN COVER (#6).

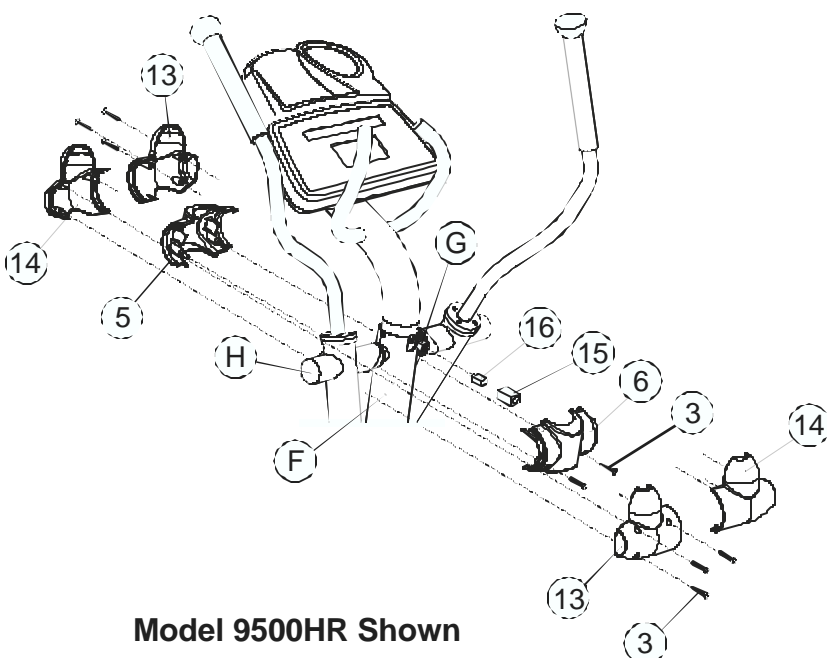
Step 12 (Model 9100 Only)

Place the FRONT MONOCOLUMN COVER (#5) on the opposite side of the BACK MONOCOLUMN COVER (#6) to cover the PIVOT SHAFT (G) and CONSOLE SUPPORT ASSEMBLY MOUNTING SCREWS. Use four PHILLIPS PAN HEAD SCREWS (#3) to secure the MONOCOLUMN COVERS together. Tighten the screws securely.

Step 13 (Model 9500HR Only)

Place the FRONT MONOCOLUMN COVER (#5) on the opposite side of the BACK MONOCOLUMN COVER (#6) to cover the PIVOT SHAFT (G) and CONSOLE SUPPORT ASSEMBLY MOUNTING SCREWS. Interlock the top tabs and use two PHILLIPS PAN HEAD SCREWS (#3) to secure the bottoms of MONOCOLUMN COVERS together. Tighten the screws securely.

CAUTION: DO NOT OVER-TIGHTEN THE PHILLIPS PAN HEAD SCREWS (#3).



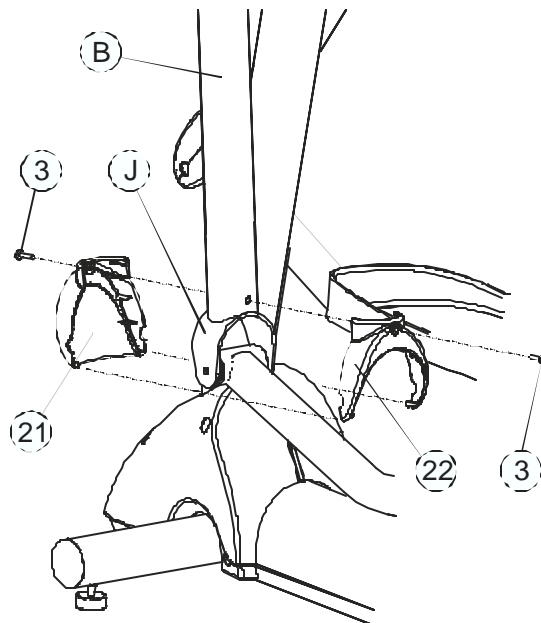
Model 9500HR Shown

Step 14 (Model 9500HR Only)

Locate one FRONT ROCKER COVER (#13) and one BACK ROCKER COVER (#14). Position the FRONT ROCKER COVER over the user side of the left end of the PIVOT SHAFT (F) (as shown) making sure that it interlocks with the MONOCOLUMN COVERS (#5 & #6). Place the BACK ROCKER COVER over the opposite side of the left end of the PIVOT SHAFT in the same manner. Secure the covers using three PHILLIPS PAN HEAD SCREWS (#3). Repeat the procedure reversing front and back for the user right end of the pivot shaft.

Step 15

Rotate the LEFT ROCKER ARM (B) to its fullest rear position. Locate one FRONT CLEVIS COVER (#21) and one BACK CLEVIS COVER (#22). Position the BACK CLEVIS COVER at the LEFT CLEVIS JOINT (J). Hook the bottom tabs of the FRONT CLEVIS COVER into the bottom of the BACK CLEVIS COVER and pivot the FRONT CLEVIS COVER upward to fully meet the BACK CLEVIS COVER. Secure the CLEVIS COVERS to the LEFT ROCKER ARM using two PHILLIPS PAN HEAD SCREWS (#3). Tighten the screws securely.



PRE-OPERATION CHECKLIST

- ☐ *Ensure that all fasteners are tight.*
- ☐ *Make sure the CROSS-TRAINER is properly leveled and stable.
(Refer to the Operation Manual)*
- ☐ *Ensure that the Leveler Jam Nuts are tight.
(Refer to the Operation Manual)*
- ☐ *Read the entire Operation Manual before using the Cross-Trainer.*

Before attempting to operate your Cross-Trainer, it is imperative that you familiarize yourself with the contents of the Operation Manual. If your Cross-Trainer does not respond as described in the OPERATION MANUAL, contact the nearest Life Fitness service center as listed in the Operation Manual.

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers

UNPACKAGING INSTRUCTIONS

Step 1

Remove all staples from the corrugated shipping container and fold down the four sides of the base tray (A).

Step 2

Lift and open the top flaps of the shipping container sleeve (B). Lift and remove the two front support posts (C).

Step 3

With the help of another person, carefully lift the shipping container sleeve (B) up and off of the base tray (A) and over the Cross-Trainer (D). Remove the ship kit box (E) from the Cross-Trainer and set aside. Remove the remaining corner posts (F) and ship kit support (G).

Step 4

Using a screwdriver, remove the rear locator pad (H) from the base tray (A).

Step 5

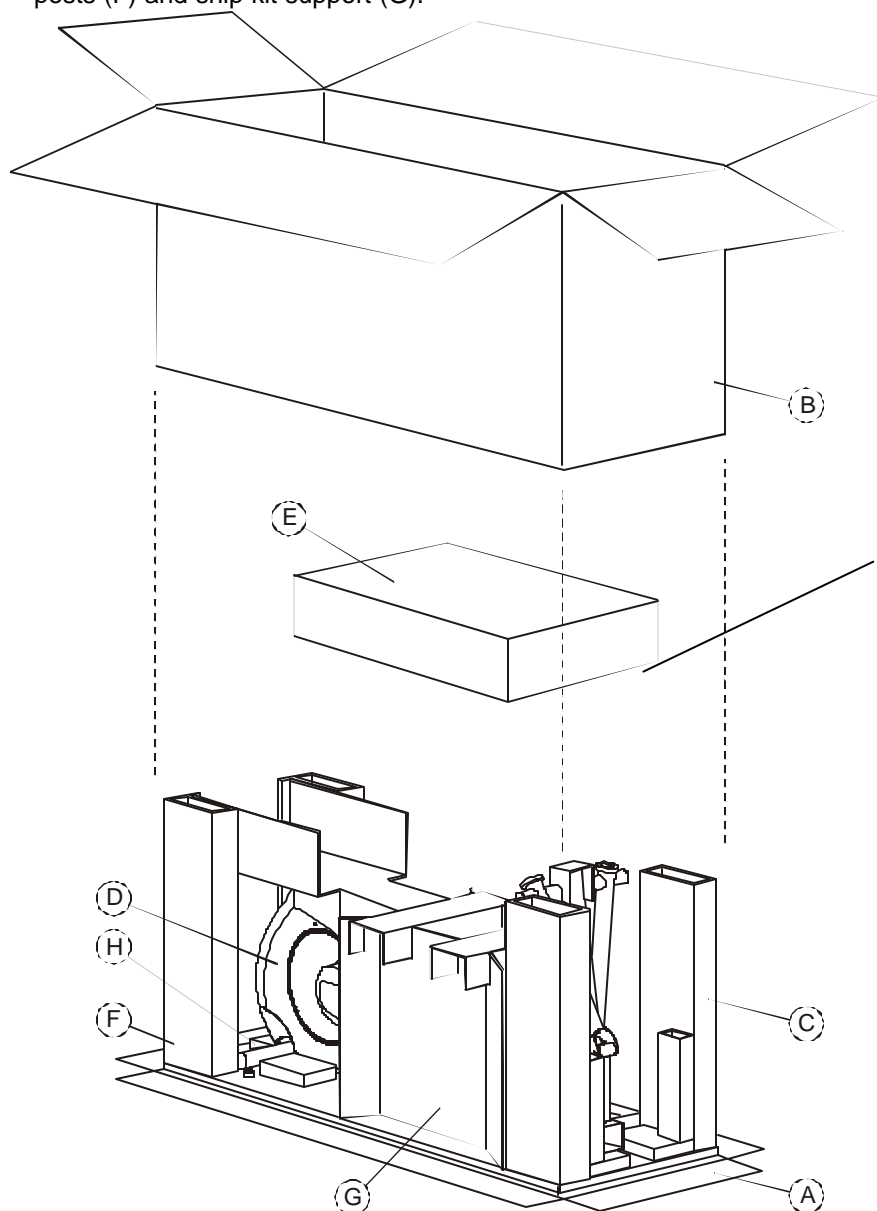
Carefully lift the front of the unit and slowly roll the unit backward beyond the flattened base tray.

Step 6

Follow the Installation Instructions included in the parts bag to complete the assembly of your Cross-Trainer.

Ship Kit Contents:

- ✓ Left & Right User Arms
 - ✓ Console Support Assembly
 - ✓ Left & Right Front Covers
 - ✓ Display Console
 - ✓ Front & Back Monocolumn Covers
 - ✓ Hardware Kit
 - ✓ Installation Instructions
 - ✓ Polar Receiver Kit
- (9100 / 9500HRR Only)
- ✓ Reading Rack Assembly
- (9500HRR Only)
- ✓ Heart Rate Monocolumn Covers
- (5500HR Only)
- ✓ Line Cord (*International Only*)
 - ✓ Power Supply
 - ✓ Polar Transmitter Kit



IMPORTANT
SAVE YOUR PACKING MATERIALS IN CASE OF

Life Fitness Model 8500, 9100, and 9500HR Cross-Trainers
COMMUNICATING BY FAX

If you would like to submit a parts order, or if you need help troubleshooting a problem, we have included, for your convenience, a FAX form on the following page. Simply make a copy (or copies) of the FAX sheet and fill in the necessary information. You may FAX us at any time, 24 hours a day, to either of the numbers shown. A Life Fitness service representative will process your order, or respond to your problem, as quickly as possible.



SALE ☒ WARRANTY ☐

 GROUND



CUSTOMER SUPPORT SERVICES

10601 W. Belmont Ave., Franklin Park IL 60131 PHONE (800) 351-3737 Toll Free or (708) 451-0036
FAX (800) 216-8893 Toll-Free or (708) 288-3702



NOTES:
